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COAL DEVELOPMENT INFORMATION PACKET

SUPPLEMENT I

By:

The Montana Energy Advisory Council

Lt. Governor Bill Christiansen  
Chairman

July 1975

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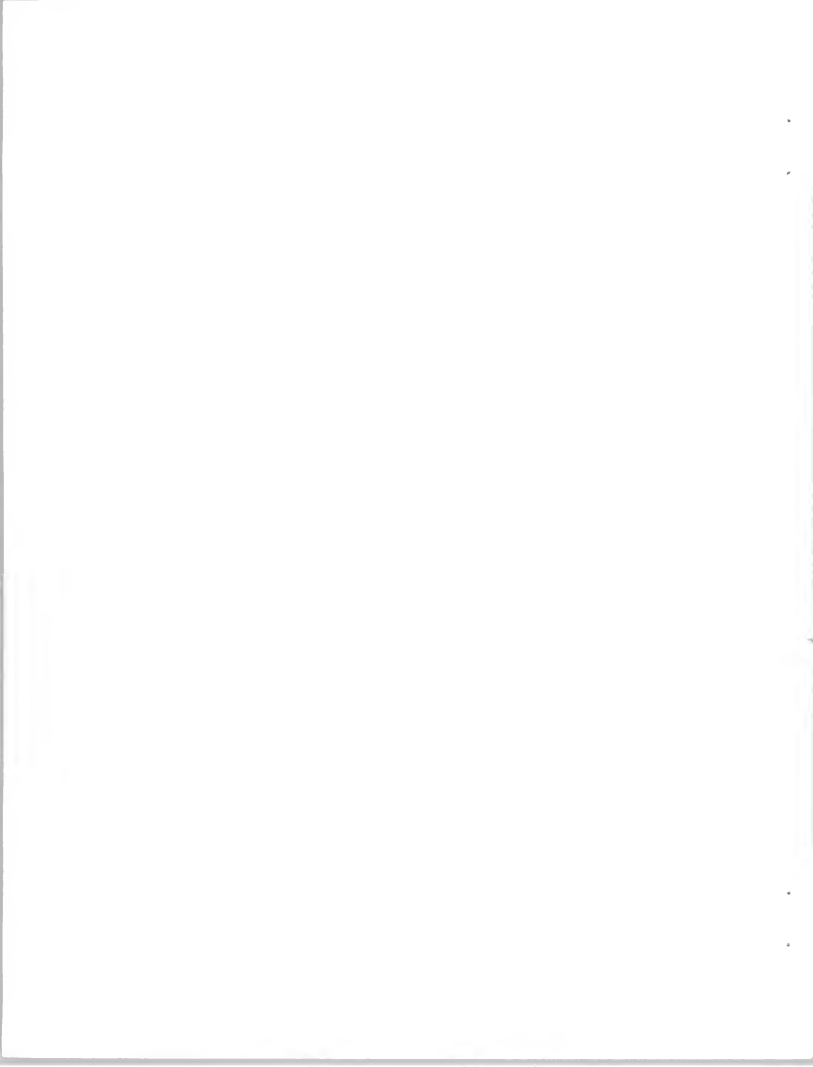
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## INTRODUCTION

This publication is a supplement to the Coal Development Information Packet prepared and distributed by the Montana Energy Advisory Council (MEAC) in December 1974. Its purpose is to provide a brief summary of "socio-economic" information pertinent to existing and potential energy development activities in Montana.

This supplement draws few conclusions about the costs and benefits of energy development in Montana. Rather, we have attempted to summarize those research projects concerning social and economic aspects of development that have been completed. Other pertinent research programs are underway and are not discussed. Far more research is needed. As on-going projects are completed and new projects are started, this supplement will need to be updated. Nevertheless, the material presented here is timely and should provide the reader with a basis for further investigation.

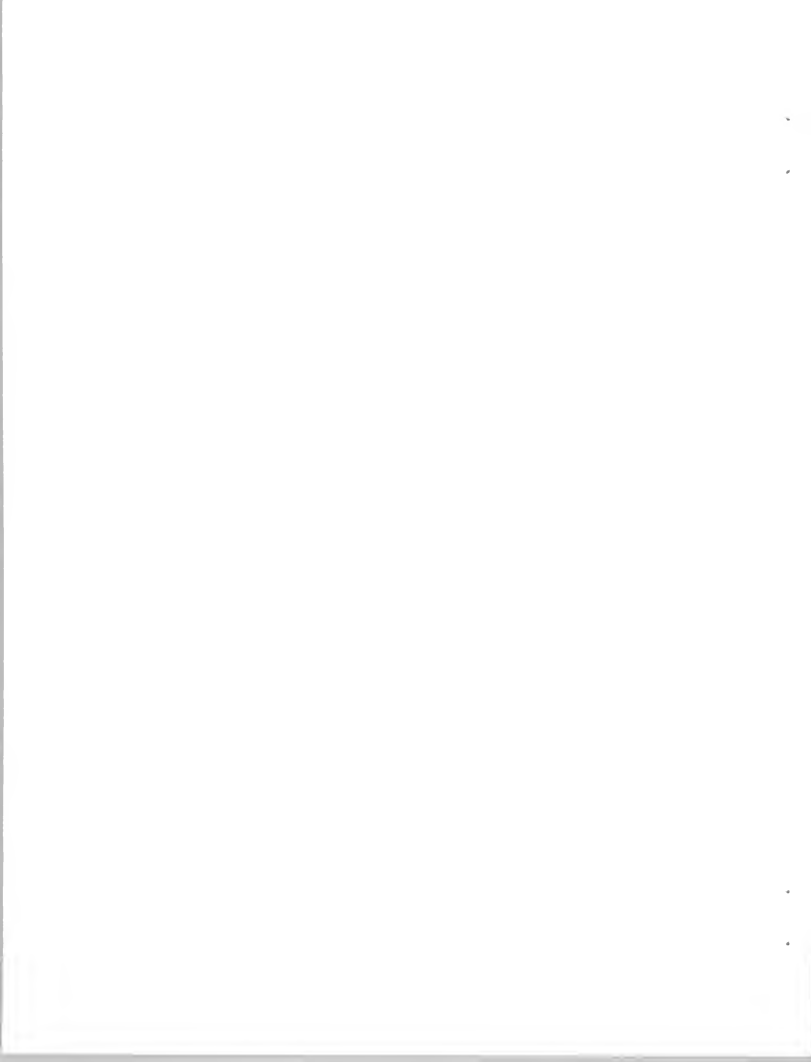
The Montana Energy Advisory Council was able to gather only limited information on state service capabilities in the coal development area. More complete information will be available from the Human Services Project in July of this year. Interested persons should contact:

Human Services Project  
Suite 4, Diamond Block  
Helena, Montana 59601  
(406) 449-3830

We encourage interested persons to pursue the research reports and references presented in Chapter V of this supplement. Although we have attempted to make this supplement as current as possible, the supplement is not exhaustive. Questions and requests for additional information should be directed to the referenced sources or to:

Montana Energy Advisory Council  
Room 104, Capitol Building  
Helena, Montana 59601  
(406) 449-3773

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COAL DEVELOPMENT INFORMATION PACKET

SUPPLEMENT I

By

The Montana Energy Advisory Council

I. Some Impacts of Coal Development Upon Government Services and Life Styles in Southeastern Montana.

The following material is taken from papers prepared under the aegis of the Northern Great Plains Resource Program (NGPRP) and from personal communications with researchers, area residents and involved government officials. All the impacts described are essentially localized, with the major impacts seldom extending beyond the boundaries of the county in which development is occurring. The research done to date concerning areal impacts is far from adequate and does not permit firm conclusions to be drawn, as the NGPRP has noted in its Interim Report. However, it is hoped that what is presented below will provide the public and their decision-makers some indication of what may be in store for residents and governments of development areas, should development proceed rapidly and on a large scale. It should be noted that the absolute scale of development now occurring in Montana is far smaller than that envisioned in the NGPRP coal development profiles. <sup>1/</sup> To date, major new development has been limited to the opening of a new strip mine, expansion of old ones and the construction of two 330 megawatt coal-fired, thermal electric generating plants (the latter sequentially).

The benefits of industrialization of Eastern Montana's coal reserves have been much touted. Increased revenues to state, county and local governments, more jobs at high wages and stimulation of "sagging" economies have been presented as immediate and lasting benefits. However, attention to the known and possible costs of such development has been limited to the efforts of a few prestigious research organizations, state government, a few federal agencies and some small, but capable, citizen's organizations.

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<sup>1/</sup> See Chapter II for projected levels of coal development and resultant population and employment levels.

Preliminary findings of research addressing such costs have begun to trickle in and some attention has been paid to more detailed examination of the ostensible benefits of rural area industrialization. Some of the costs noted are quantifiable in a monetary sense. Many others are not presently quantifiable in that sense and, as a result, often are not documented. It is to those latter costs that the bulk of the following is addressed.

A. Effects Upon Groups, Structures and Organizations.

1. Uncertainty: To date, little beyond conjecture is available to define the date, scope and type of industrial development to be expected in Montana's coal area. Until some decision is made by state government to define the development that is acceptable to it, and until some clarification of the degree to which the federal government will allow state self-determination is made, those groups who must deal with development will have to rely heavily upon educated guesses. Assuming large-scale development is to occur, state, county and local governments must not only determine what demands such growth will place upon their services, but must also devise plans to meet those demands. To overestimate demand is to commit the structure to investment in programs and facilities that will be underutilized at taxpayers' expense. To underestimate demand is to insure that legitimate needs will not be met, that those responsible for demands are not apt to pay their share, and that the taxpayer, again, will be forced to meet an expense not of his making.

This problem now is affecting all levels of government in the coal development area in Montana, especially in Rosebud County. Staggering demands are being made on local and county government services and resources. Government bodies are experiencing difficulty in meeting those demands due to lack of financial resources and due to lack of a clear understanding of the ultimate level those demands will reach. It is not sufficient to respond simply to immediate demand -- these government structures must comprehend the ultimate service needs in order to generate appropriate, efficient and effective programs to meet both present and ultimate demands.

Similar effects are being noted in the commercial and voluntary sectors of service providers. According to Turner and McCaw (Office of Economic Opportunity, 1974), only financial institutions, and not all of them, are making plans to cope with the changes energy industrialization is expected to bring. Some local businessmen reportedly are holding up plans to expand the range of their services until such time as the limit of their potential market is known, though others have taken the risks which accompany the expansion of their operations. Fears also exist that, with larger development, chain outlets will be drawn to the area, representing competition the locals can't meet and an outflow of profits from the local area. In addition, the housing and land markets are similarly affected. Housing and land are scarce and rents are increasing, while local interests are reluctant to go too far with investments in the event of a sudden cessation or reversal of growth.

The primary industry of the area is affected similarly. Agricultural interests, many of which must expand regularly to stay competitive (see Gold, "A Comparative Case Study of the Impact of Coal Development on the Way of Life of People in the Coal Areas of Eastern Montana and Northeastern Wyoming"), are marking time in an attempt to determine whether capital outlays to increase productivity (more land, more equipment) will be profitable -- it is very possible that massive industrialization and agriculture will prove incompatible.

The voluntary sector apparently feels that it will be able to meet additional demands. Yet, Turner and McCaw doubt that these interests fully comprehend the potential magnitude of change in the demand for their services. As in any large rural area, voluntary services (religious groups, civic groups, recreational organizations, specific purpose organizations) are extremely important and serve the needs of a great number of people.

These problems are doubly complex in the context of Colstrip, a company town. Not only must citizens, government and groups concern themselves with area development uncertainty, but also with the uncertainty over what responsibilities the company will assume to meet the needs their town has generated.

2. Antagonism: According to Gold, formal and informal relationships established among and between groups, that allow them to work together to achieve local goals, have begun to experience strains. The systems that operate in the area depend to a great degree upon trust and cooperation to get jobs done. This is particularly true with respect to the interaction between agricultural interests, and the commercial and finance sectors. Due to the magnitude of change that has been experienced to date, and to differing positions with respect to the advisability of continued industrialization, these systems of interaction have begun to break down. Again, according to Gold, industrial interests have taken advantage of these strains and have worked to aggravate them further; in effect, to divide and conquer. As a consequence, suspicion and distrust between groups are prevalent. Yet, in order to cope adequately with development demands, and to arrive at a position defining acceptable growth, channels of communications have to remain open.
3. Demands for Services: Detailed data on government expenditures to meet increased demand for services have yet to be thoroughly tallied. However, discussion with local and county officials reveals a bleak picture, particularly in Rosebud County. The potable water supply system of Forsyth is being strained to its limits, as is the sewage disposal system. The potable water supply in Colstrip has in the past year been reported contaminated, though this has been corrected. Any increase in the capacity

of the Forsyth water and sewage systems is apt to come at local taxpayers' expense, although some federal assistance may be available. County officials also have reported that planning efforts related to land use in the area are making little headway. This, in part, is due to limited financial reserves for support of a planning staff and lack of consensus concerning what the planning mandate should be. Practically all land in the Forsyth area that is available for siting of mobile homes is being used for that purpose. The part-time county sanitarian 2/ (he is shared with two other counties) has predicted that serious public health problems may arise in the very near future.

Rosebud County has only one public health nurse. Interviews with this nurse have revealed that she is unable to perform all the services she would like to provide -- she is barely able to keep up with her responsibilities with school children. The Department of Health and Environmental Sciences has been providing some additional aid, such as family planning services, on an intermittent basis. In addition, a \$175,000 grant to build local health services in rural Eastern Montana has been awarded to the Department of Health and Environmental Sciences by the Old West Regional Commission.

While the Rosebud County service area has numerically adequate hospital and long-term care facilities, these are located in Forsyth, 35 miles from the Colstrip construction and mining site. The only health care facilities available in Colstrip are two mobile homes; one located on the construction site and the other closer to the housing area in Colstrip. These mobile units were provided by the Montana Power Company and its construction affiliates, are staffed by nurses, and serve as first aid stations and elementary diagnostic and referral centers. However, the Rosebud public health nurse and the Department of Health and Environmental Sciences' personnel are unable to use these units when health programs are brought to Colstrip.

Rosebud County, like so many other rural Montana counties, has a shortage of health manpower and has lost all but one of its physicians. Those that serve the area were overworked before industrialization began.

The school system in Rosebud County, especially at Colstrip, has been noticeably affected by industrialization. While some of the space problems have been solved through a Montana Power Company donation of mobile homes, to be used as classrooms, classes are still very large. Several courses formerly offered have been dropped as luxury items, as

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2/ Grant monies to hire a full-time sanitarian recently have become available to Rosebud County.



the teaching staff struggles to meet increased demands. Many individuals have complained that the quality of education offered by the Colstrip school has declined. Newcomers to the area also complain about the lack of certain courses.

Recreational opportunities in the Colstrip area are very limited. Formerly, the school building and the Colstrip Interdenominational Church were used as recreation sites for young and old alike. Now, both are too overcrowded for use on a regular basis. There are no other indoor recreational facilities in Colstrip. Consequently, at quitting time and on weekends, there is a mass exodus from the area, with many, newcomers and locals alike, going as far as Billings to "get away".

The incidence of crime in Rosebud County has skyrocketed. In 1972, total felony and misdemeanor arrests totaled 129 arrests (7 felonies, 122 misdemeanors); in 1973, this figure rose to 835 arrests (13 felonies, 822 misdemeanors). Of the 1973 offenses known to police, more than one-half were larceny theft; slightly over 15 percent were aggravated assault.

Finally, the Rosebud County roads in the vicinity of industrial activity are in terrible condition. Designed to handle moderate use, they are now being used as major industrial arterials and are also receiving heavy use by the increased population of the area.

To meet these demands, the county has, until July 1, 1975, two major sources of tax revenues, in addition to normal county mill levies. 3/ These are the Net Proceeds Tax and a three cents per ton county share of the Coal Mines License Tax. However, the Net Proceeds Tax, paid by mining companies, allows a deduction for the costs of doing business (which includes land reclamation expenses). As a consequence, county officials have no way of predicting the income that will derive from that tax and must either limit expenses or make up the revenues in other taxes -- taxes paid by county residents, most of whom receive no direct benefits from coal development. Interestingly, while the Department of State Lands has estimated that reclamation can be accomplished at a cost of \$700 per acre, Rosebud County mining interests are claiming greater expenses -- one company claims several times that amount. As a result, while coal production has increased, proportionate income from the Net Proceeds Tax has decreased.

One study conducted under auspices of the NGPRP (Williams, Patterson and Leland) has suggested the development of centralized county service centers in order to efficiently meet increased demand. These centers

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3/ See Chapter IV for information on coal tax laws taking effect July 1, 1975.

would be staffed by professionals in relevant fields and would be supported by planning capabilities.

In contrast, Gold and his research team, on the basis of lengthy and thorough interviews with area residents, maintain that such facilities may be inappropriate in the area. Gold has found that rural area residents often have difficulty in relating to their county governments, and suggests that centralized facilities would only aggravate the problem. Gold suggests that decentralized facilities are necessary. Unfortunately, both approaches require considerable revenue, and time, to accomplish -- both of which now are in short supply.

B. Estimate of Impact Funds Required for Coal Development in Montana.

The Office of the Federal-State Coordinator has derived some preliminary estimates of government costs that may be induced by coal development. The estimates were developed from research reports and conversations with county officials. Development alternatives for the estimates were drawn from rumored and suggested development profiles of a number of federal agencies and programs. The development alternatives do not represent any position held by Montana State Government. The development alternatives are as follows:

Projection A -- No increase in coal production, but all coal would be consumed by in-state conversion plants. It is assumed that the present level of production would include some increases required by current contracts. Total coal production would be 40 million tons per year.

Projection B -- 250 million tons of coal produced and consumed by in-state conversion plants.

Projection C -- 500 million tons of coal produced and consumed by in-state conversion plants.

It must be noted that these coal development alternatives are entirely contrary to state policy and to the expressed wishes of Montanans. Montana coal development policy encourages conversion of coal to other energy forms only in response to state need and encourages export of additional coal mined in the state. In addition, existing mining operations in Montana have long-term contracts which specifically require export of coal. These export contracts account for most of the coal mined in the state. Projections B and C also are of very questionable technological and physical feasibility -- total United States' coal production was approximately 600 million tons in 1974. Materials, manpower, technological, legal and capital constraints make these alternatives highly unlikely. However, the alternatives do reflect what could happen if various shortsighted federal designs are followed. Given these projections, impact costs to government units were estimated as follows.

Projection A

This projection assumes that the Colstrip population will increase to 12,900 by 1985, and that new towns of 7,000 to 9,000 population will develop at Sarpy Creek and Decker, with associated increases in populations of Hardin and Forsyth.

Table I-1  
Estimated Local Government Costs  
By Projected Development Alternative

Major Impact Items For Local Governments	Costs in Millions (1976-1978)
Primary site planning, design, layout to the point of engineering -- two new towns at Decker and Sarpy.	.5
Planning for significant development at Forsyth and Hardin.	.3
Planning, complete engineering, landscaping, and first phase of construction of facilities for up to 10,000 construction workers (if phased, 5,000 to 6,000). This would include temporary housing, mobile home pads, dining halls, etc. Cost would be \$6 to \$12 million for local monitoring and planning for 30 units of 100 pads each over the first three years.	.03
Temporary water, sewage and waste disposal facilities.	1.
Local government management (including training), increased personnel (ten persons at \$15,000, plus \$100,000 for training).	.55
Water supply and transmission system (\$200,000/1,000 population).	6.
Purification and treatment (\$50,000/1,000 population).	12.5
Sewage treatment \$10 million by 1985, one-half by 1978.	5.
Sewer lines (part of development cost at \$756,000/1,000 population). Initial lines at public expense.	.7
Solid waste disposal (4 acres/1,000, plus equipment and construction equals \$10,000/1,000 population).	.3
County roads and arterial streets (estimate for county roads needing reconstruction is \$52 million, plus \$4 million for city streets serving as thoroughfares with 2/3 of construction to be completed by 1978.)	37.

Table I-1 Cont'd.

<u>Major Impact Items For Local Governments</u>	<u>Costs in Millions (1976-1978)</u>
Schools and school facilities at \$4,333 per student and 29 percent of population of school age equals \$37.7 million for permanent employees. Temporary construction workers could increase this by as much as 1/3, but a ten percent increase in cost of facilities might be more realistic, bringing the total to \$41.4 million with 1/2 of funding required before 1978.	20.7
Community centers and social facilities for those with special needs (senior citizens, youth, organizations), group homes, sheltered workshops, etc. Centers would be built by 1978 to accomodate developing communities.	2.
Community offices, city halls, fire halls and equipment, police and sheriff's offices and equipment.	1.7
Parks and recreational facilities (10 acres/1,000 population) planning, landscaping, equipment, swimming pools.	1.5
Hospitals (4 beds/1,000 population equals for 120 beds by 1985). An additional 40 beds by 1978, plus planning for others.	2.4
Nursing home facilities -- 60 beds by 1978 at \$20,000.	1.2
Ambulance and emergency vehicles and equipment.	.18
Transportation system -- minimal equipment and three years operation, plus planning for future needs.	.2
Housing -- need for 8,000 units with subsidized program on 1/6 of 3,000 units constructed in first three years. An average subsidy of \$1,000 on 250 units in 1976. 500 in 1977.	.75
<b>TOTAL</b>	<b>\$96.23 million</b>

Per capita cost during 1976, 1977 and 1978 for the projected 1985 population of 30,000 would be \$3,195.

#### Projection B

Projection B would require similar per capita costs with the only major adjustment for highway and road costs. In most other areas, these costs would be substantially less to local governments since they would be served by state highways. This might lower per capita costs based on 1985 population to \$2,500 for the first three year's planning and preliminary development costs.

Projection B would increase population by about 200,000 persons by 1985. The impact on local governments would therefore be about \$500 million during those first three years. However, because of the strain this degree of activity would place on Montana's capability, the cost probably would be much higher.

#### Projection C

For Projection C, one could double costs to \$1 billion. Again, this level of development in such a short period of time (even if possible) probably would be much more costly.

Table I-2 <sup>4/</sup>  
Impact Costs to State Government  
First Three Years

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
<u>Office of the Governor</u>			
Budget and Program Planning: To direct and coordinate the efforts of state agencies in planning to meet the needs of the coal development areas and to initiate a process providing input from those areas into the state planning process.	.5	1.	1.5

---

<sup>4/</sup> The rapid rate of growth which would result from the development proposed by Projection B or C would impact every aspect of government. This summary includes only those items which would require planning and start-up costs during the next three years. All are broad-brush estimates.

Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	<u>Projection</u>		
	<u>A</u>	<u>B</u>	<u>C</u>
Commission on Local Government and Human Resources Project: To project local government needs for services and management and to determine the programs and responsibilities of the various levels of government assistance which the state should provide.	.2	.6	1.
Federal-State Coordinator: To assign one person to assist local governments and state agencies in obtaining federal assistance for the area (two persons for Projection C).	.0	.15	.2
Manpower Program: Costs for planning, training and placement.	.13	.63	1.3
<u>Office of the Lieutenant Governor</u>			
Montana Energy Advisory Council: Assisting and monitoring studies and projects related to coal development -- public information through newsletters and public programs.	.15	.25	.4
<u>Office of the Superintendent of Public Instruction</u>			
Finance Planning and Evaluation Services: Increased need for data processing services, impact aid service, planning coordination and research.	.05	.2	.3
Information Services.	.05	.1	.2
Educational Services.	.5	2.	3.

Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
<u>Department of Administration</u>			
Communication Division: To extend the state communications network throughout the coal areas.	.75	1.5	2.4
<u>Department of Education</u>			
Agricultural Experiment Station: Basic and applied research in finding methods to accommodate agriculture and coal production.	.5	1.5	2.5
Cooperative Extension Service: Informational and community development programs in growing areas, support of programs of leadership development and state staff functions.	.1	1.4	1.8
Eastern Montana College, Miles Community College, Dawson Community College and Other Units: Additional programs providing community service programs for local officials, citizens and new residents in the area to assist them in planning for and coping with growth.	.3	1.6	1.9
Research: University research related to coal development.	.1	1.5	2.
Educational Broadcasting Commission: The development of informational programs and community forums by TV to encourage local input into decision making and planning processes. Extension of TV coverage to entire area.	2.	3.	3.
<u>Department of Fish and Game</u>			
Environment and Information: To provide information to the public and to minimize impact on development of fish and game in the area.	.05	1.	2.

Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
Recreation and Parks: Acquisition of lands for future park development, fishing access sites, historic and archeological sites, to meet the needs of increased population.	.5	2.	3.
Planning: Formulate plans to accommodate recreational needs of new population.	.1	.1	.3
<u>Department of Health and Environmental Sciences</u>			
Comprehensive Health Planning: To provide additional personnel for health planning in areas impacted.	.15	.25	.4
Health Services and Disease Control: Additional services in area.	.09	.2	.25
Health Care Facilities and Manpower: Assess needs and plan for facilities and manpower required.	.05	.2	.25
Water Pollution Control: Regulate and assist in construction of waste water treatment systems. Provide controls on groundwater quality and safe drinking water.	.1	.25	.35
Review sanitary conditions for subdivision at \$3,000 per 100 to 200 lot unit (average ten per year for A; 40 for B; 60 for C -- first three years).	.06	.24	.36
Air Quality Bureau: Development of regulations and monitoring of plants.	.05	.25	.35
<u>Department of Highways</u>			
Planning, Construction and Maintenance of State Highways in Area: \$287,000/mile.	15.0	39.4	54.
(Note: County roads in Rosebud, Treasure, and Big Horn Counties may become part of state system, but are listed under local government costs.)			



Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
<u>Department of Institutions</u>			
Adult Probation and Parole and Multipurpose Residential Service: Additional personnel and facilities.	.09	.3	.4
Drug and Alcohol Treatment and Prevention: Rehabilitative facilities and program development.	1.	1.5	2.
Mental Health Program -- Eastern Montana and South Central Regions: Additional personnel and facilities and community education and information.	1.	3.	4.
*/			
<u>Department of Intergovernmental Relations</u>			
Aeronautics Division: Enlargement of aircraft pool and additional use.	.15	.8	1.6
Airport development to assist in construction of local government.	.4	.8	1.6
Human Resources: Additional assistance to Human Resource Development Councils in coal areas.	.09	.2	.4
Management Service: To assist local governments in developing management and accounting systems.	.08	.6	.8
Economic Development: Planning for diversification of economic base of area.	.15	.3	.5
Planning: To assist with planning programs in area, training of new planners, development of preliminary plans for new communities. Review subdivisions at \$7,500 per large subdivision, 100 to 200 lot units.	.15	1.	2.

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\*/ On July 1, 1975, the Department of Intergovernmental Relations changed its name to the Department of Community Affairs.

Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
Indian Affairs Coordinator.	.05	.08	1.
Research and Information: Data files, maps, directory and other data needed for planning and research in area.	.08	.5	1.
Housing: Additional staff to assist with development and financing of housing in area.	.08	1.6	2.
<u>Department of Justice</u>			
Law Enforcement Academy: Special training in areas to meet new situations.	.15	.3	.4
Highway Patrol: Added personnel and cars at \$5,000/1,000 population per year.	.05	.3	.6
Crime Control: Planning and action, develop system of programs appropriate to rapidly changing life styles.	.1	.3	.6
Investigation, communication and identification.	.02	.1	.15
<u>Department of Labor</u>			
Increased funding for Labor Standards Division, labor law administration, safety, health and other functions.	.2	3.	.4
<u>Department of Military Affairs</u>			
Civil Defense: Emergency centers, planning and training.	.2	.3	.4
<u>Department of Natural Resources and Conservation</u>			
Water Rights: Monitor state involvement in water development activities, supervise contracts, collect data for planning purposes.	2.	3.	4.

Table I-2 Cont'd.

	<u>Costs in Millions</u>		
	Projection		
	<u>A</u>	<u>B</u>	<u>C</u>
Water Resource Planning: To formulate coordinated multi-purpose water resource plans for area.	.3	1.5	2.
<u>Department of Public Service Regulations</u>			
Regulating and conducting safety inspections of railroads, motor carriers, public utilities and pipelines, many of which will be required in the area.	.15	1.	2.
<u>Department of Social and Rehabilitation Services</u>			
Community Services: Social services to youth, elderly and those with special needs -- at \$1 million per 100,000 persons -- funding for program development, 25/75 match, plus program development.	1.5	2.5	4.5
Staff development and training.	.15	.25	.45
Youth Development: Coordinate and encourage youth service systems.	.09	.25	.45
Developmental Disabilities: Develop new programs and facilities (services covered under social service programs in communities).	.06	.2	.3
Aging Services: Develop programs and facilities.	.18	.9	1.2
<u>Department of State Lands</u>			
Reclamation: To regulate, issue permits for and monitor mining operations to ensure standards are met.	.18	1.2	1.4
Saline Alkali Study: As it relates to reclamation of mined areas.	.15	.9	1.2
	<u>          </u>	<u>          </u>	<u>          </u>
TOTAL STATE IMPACT	<u>\$30.64</u>	<u>\$87.02</u>	<u>\$123.9</u>

(Note: Increase of population under Projections B and C would increase costs of state government across the board. Costs for services, salaries and wages, leasing of space and other expenses in Eastern Montana have been relatively low and would increase substantially with population growth.)

C. Effects Upon Life Styles.

Gillette Syndrome: The term "Gillette Syndrome" was coined by a Wyoming clinical psychologist, ElDean Kohrs, and refers to a constellation of "deviant" behaviors noted in persons located in rural, western boom towns. In using this term, Kohrs often refers to the accompanying "4-D's" -- drunkenness, depression, delinquency and divorce. Crowded and unsanitary living conditions, lack of basic community services, lack of recreational outlets, lack of community identity, lack of permanence and long hours at what may be an unrewarding task all contribute to the development of the Gillette Syndrome. Kohrs also notes that suicide attempts (though rarely fatal) are very high. He also indicates that school dropout rates are very high, that truancy is high, delinquency is common and that criminal facilities are overtaxed, in some cases because no other facilities are available (e.g., see Kohrs, 1974, Social Consequences of Boom Growth in Wyoming).

It is interesting to note that some of the characteristics of the boom towns Kohrs discusses are beginning to appear in the Colstrip area.

Anomie and Uncertainty: Gold has observed a growth in the occurrence of anomie among residents of the Colstrip area, whether locals or newcomers. ("Anomie" refers to feelings of rulelessness, powerlessness, futility and despair which come from sweeping social changes over which those concerned have little or no control and which they consider to be essentially oppressive.)

Living and working conditions in the Colstrip area work against the establishment of permanent or lasting ties between individuals. The sense of impermanence in the area ("the whole town is on wheels -- I expect to wake up some day and see half of it gone." Quote from Raymond Gold's paper.) makes such relationships impractical. In addition, the construction community at Colstrip is segregated into "manual" and "non-manual" sectors -- a Bechtel policy. While Western Energy and the Montana Power Company maintain that such segregation is not their policy, potential residents of the new permanent housing in Colstrip appear to be carefully selected. In addition, since Colstrip is totally a company town, residents have virtually no say or involvement in the conduct of community affairs. As a consequence, there is little for people to do in their off-hours, beyond drinking or watching television. Gold reports that many housewives in the construction area have become food and television addicts. (A summer recreation program promises to mitigate this state of affairs.)

Locals have found many of their former ties to the old community ruptured by the newcomers. This, combined with the antagonism and resultant mutual avoidance that has come to characterize relationships between those holding divergent views on development, has served only to increase feelings of isolation. Many locals report feeling that Colstrip is no longer their town and that they are strangers in the area in which they have spent their entire lives.

The isolation in which ranchers and other agricultural operators have come to work in the area has served to increase their feelings of uncertainty about the future. Those living in the area have typically felt that, except for the vagaries of nature (to which they have adapted), they were largely in control of the direction of their lives. With massive coal development on the horizon, and no specific information as to what to expect from the companies, the state and the federal government, this certainty has been lost. Instead, uncertainty, hesitancy, resignation and, in some cases, fear, are becoming the rule. In this atmosphere, rumor and suspicion become guiding factors in behavior. According to Gold, many persons in the development area are making decisions about their lives without adequate information and ways of determining what is "really" going on. And, in this respect, the necessary characteristics of social interaction -- trust, a sense of cooperation and responsibility -- are becoming less common. Many residents report that much of the joy of their lives has been lost, to be replaced by hostility, suspicion of former acquaintances and friends, and a sense of having to fight everyone for survival. Some mention how they have been forced to lower their standards of what constitutes a quality life style, and then wonder how much more social impact will be tolerable.

Beyond this, other specific effects of growth in the area are being felt. People, town folk and ranchers alike, now report feeling it necessary to lock up their possessions for the first time in their lives. Women report feeling reluctant to go places alone, for the first time in their lives. Many local families report avoiding bars and other local gathering places because they are now potential objects of abuse and, in some cases, provoked fights.

Landowners report a contempt for, and an astounding unawareness of, property rights. Many complain of shady tactics on the part of land speculators and mining interests in this respect. Some such apparently take advantage of the size of some agricultural units to illegally survey or sample underlying coal seams on the chance that they won't get caught. Lies and deception are reported to be common practices of land speculators and mining interests in their attempts to put together sizeable leases. Other ranchers have reported harassment concerning continued leasing of certain non-federal land when they oppose coal development.

Finally, many of those interviewed have displayed an awareness of the problems that afflict other states in the nation and, sympathetic as they are, do not wish to see them duplicated here. They justifiably fear a massive influx of "outsiders", for what they value most about Montana is seldom held in high esteem by those newcomers. Montanans, by the nature of their state, have been forced to live somewhat less profligately than many of their countrymen. Many of those interviewed feel that many of the energy, materials and foods crises now afflicting the nation are inevitable and traceable directly to those profligate ways. They feel that the only realistic solution to those crises is a change in lifestyle, not simply a new approach to exploitation. Holding that conviction, Montanans do not wish to see their cherished state and cherished life style sacrificed only to postpone, for a short time, the nation's inevitable day of decision.

## II. Selected Projections of Impacts Related to Energy Development.

The material presented in this chapter has been drawn from the Draft Interim Report of the Northern Great Plains Resource Program, the Task Force Report: Synthetic Fuels From Coal of the Federal Energy Administration, and the publication Water Use and Coal Development in Eastern Montana, prepared by the Bureau of Business and Economic Research, University of Montana. These documents contain a wealth of information concerning energy development and should be read by interested citizens. Chapter V of this supplement presents a list of these and other relevant documents and where they may be obtained.

It must be emphasized that projections of events are simply that -- they are educated guesses based upon certain mathematical manipulations and qualifying assumptions. They are not infallible and inviolable forecasts of the future. If the assumptions underlying the projections are invalid, if technology should suddenly change or if energy demands have been miscalculated, the projections may be quite inaccurate. Nevertheless, projections can serve as a useful tool in catching a glimpse of what the future may bring.

### A. Population Projections for Coal Development Areas.

Table II-1 presents the total population projected to occur in the coal regions of Montana under three coal development profiles (CDP's). The coal development profiles are defined as follows:

CDP I: A rate of coal production sufficient to meet contractual agreements and regional increases in the demand for coal.

CDP II: A rate of coal production for export, in-region power generation, electrical export, and synthetic natural gas production.

CDP III: A rate of coal production based upon the maximum contribution that Northern Great Plains coal might reasonably be expected to make in alleviating shortages in the supply of imported oil and gas and domestic nuclear electric generation.

Coal development in Montana under these profiles would, by 1985, equal:

CDP I	39 million tons per year
CDP II	75 million tons per year
CDP III	153 million tons per year

It should be noted that Montana coal production has already exceeded the CDP I, 1985 level.

Table II-1  
Total Population Projections  
CDP's I, II, III -- 1980, 1985, 2000

Montana	State Total	Principal Impact Area			
	1970	1970	1980	1985	2000
CDP I	694,000	123,000	142,000	135,000	157,000
CDP II	694,000		144,000	179,000	187,000
CDP III	694,000		180,000	203,000	267,000

Source: Draft Northern Great Plains Resource Program Interim Report, September 1974, Page V-7.

Table II-2 indicates Northern Great Plains Resource Program population projections for selected communities in Montana under the three CDP's.

Table II-2  
Population Projections for Selected Communities  
CDP's I, II, III -- 1980, 1985, 2000

<u>Town in Montana</u>	<u>CDP</u>	<u>1970</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
Hardin	I	3,000	3,000	3,000	3,000
	II		3,000	3,000	8,000
	III		3,000	8,000	23,000
Forsyth	I	2,000	3,000	3,000	3,000
	II		3,000	4,000	4,000
	III		4,000	5,000	6,000
Colstrip	I	400	3,000	3,000	3,000
	II		3,000	6,000	6,000
	III		6,000	10,000	13,000
Lame Deer	I	1,000	1,000	1,000	1,000
	II		1,000	1,000	1,000
	III		1,000	6,000	6,000

Source: Draft Northern Great Plains Resource Program Interim Report, September 1974, Page V-13.



Table II-4 indicates the population projections for three-county and seven-county impact areas in Montana. These projections were prepared by the Bureau of Business and Economic Research (BBER) using different coal development assumptions. The BBER development assumptions are shown in Table II-3

Table II-3  
Bureau of Business and Economic Research  
Development Assumptions

<u>Montana</u>	Alternative I (No Gasification)		Alternative II (With Gasification)	
	<u>1980</u>	<u>1985</u>	<u>1980</u>	<u>1985</u>
Coal Production (in million tons per year)	49	61	57	77
Additional Electrical Generation (megawatts)	2,060	3,060	2,060	3,060
Gasification (250 million standard cubic feet per day)	0	0	1	2

Table II-4  
Population and Net Migration in the Economic Impact Areas  
with and without Coal Development  
1970 and Projected 1980 and 1985

	<u>1970</u>	<u>Projected 1980</u>	<u>Projected 1985</u>
<u>Population</u>			
Three-county impact area <sup>a</sup>			
With no coal development	18,951	NA	NA
With coal development			
Alternative I -- no gasification	18,951	23,650	25,100
Alternative II -- with gasification	18,951	26,150	30,350
Seven-county impact area <sup>b</sup>			
With no coal development	123,295	129,600	132,800
With coal development			
Alternative I -- no gasification	123,295	135,150	143,150
Alternative II -- with gasification	123,295	139,700	152,550
	<u>1960-1970</u>	<u>Projected 1970-1980</u>	<u>Projected 1980-1985</u>
<u>Net migration<sup>c</sup></u>			
Three-county impact area <sup>a</sup>			
With no coal development	-2,528	NA	NA
With coal development			
Alternative I -- no gasification	-2,528	2,070	- 568
Alternative II -- with gasification	-2,528	4,539	1,829
Seven-county impact area <sup>b</sup>			
With no coal development	-8,182	-8,103	-5,313
With coal development			
Alternative I -- no gasification	-8,182	-2,720	-1,216
Alternative II -- with gasification	-8,182	1,789	3,072

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Analysis Projections System, OBERs Projections, unpublished data (Washington, D.C., 1973); and U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Population and Housing: 1970, General Demographic Trends for Metropolitan Areas, 1960 to 1970, Montana, PHC(2)-28* (Washington, D.C.: U.S. Government Printing Office, 1971), table 3, pp. 28-10 and 28-11. The population projections under Alternatives I and II and all the net migration projections were developed by the University of Montana, Bureau of Business and Economic Research (Missoula, Montana).

NA denotes not available.

<sup>a</sup>Big Horn, Powder River, and Rosebud counties.

<sup>b</sup>Big Horn, Powder River, Rosebud, Custer, Musselshell, Treasure, and Yellowstone counties.

<sup>c</sup>A negative figure denotes net outmigration from the area.

Source: Water Use and Coal Development in Eastern Montana, Bureau of Business and Economic Research, University of Montana, November 1974.

B. Employment Projections for Coal Development Areas.

Table II-5 presents the NGPRP projected employment arising from coal development under their three coal development profiles.

Table II-5  
Estimated Employment Related to Coal Development  
Principal Impact Area -- CDP's I, II and III

<u>Montana</u>	CDP I			CDP II			CDP III		
	1980	1985	2000	1980	1985	2000	1980	1985	2000
Direct operating	1,000	1,000	2,000	1,000	4,000	6,000	4,000	7,000	14,000
Construction	1,000	-	1,000	1,000	3,000	1,000	4,000	3,000	2,000
Indirect	7,000	3,000	7,000	7,000	20,000	17,000	22,000	26,000	40,000
Total	9,000	4,000	10,000	9,000	27,000	24,000	30,000	36,000	56,000

Source: Draft Northern Great Plains Resource Program Interim Report, September 1974, Page V-5.

In Tables II-6 and II-7 are presented the employment and earnings projections developed by the BBER using their development alternatives.

Table II-6

Projected Employment and Earnings in the Economic Impact Area  
Alternative 1 -- No Gasification  
1980 and 1985

	Projected 1980		Projected 1985	
	Employment	Earnings <sup>a</sup>	Employment	Earnings <sup>a</sup>
<u>Coal-related industries</u>				
Mining	1,017	\$15,052,000	1,175	\$19,505,000
Export	820	12,136,000	915	15,189,000
Montana residents	685	10,138,000	790	13,114,000
Wyoming residents	135	1,998,000	125	2,075,000
Electrical generation	197	2,916,000	260	4,316,000
Gasification	0	0	0	0
Electrical generating plants	175	2,433,000	260	4,082,000
Gasification plants	0	0	0	0
Railroads (unit train operations only)				
Three-county impact area <sup>b</sup>	192	2,996,000	204	3,590,000
Seven-county impact area <sup>c</sup>	480	7,488,000	510	8,976,000
Coal-related industries, total				
Three-county impact area <sup>b</sup>	1,384	20,481,000	1,639	27,177,000
Montana residents	1,249	18,483,000	1,514	25,102,000
Seven-county impact area <sup>c</sup>	1,672	24,973,000	1,945	32,563,000
Montana residents	1,537	22,975,000	1,820	30,488,000
<u>Impact on agriculture</u>				
Acres disturbed (cumulative, from 1970)		5,300		11,400
Change in farm receipts per year <sup>a</sup>		-\$159,000		-\$342,000
Change in farm earnings per year <sup>a</sup>		-\$ 95,400		-\$205,200
<u>Derivative industries, total<sup>d</sup></u>				
Three-county impact area <sup>b</sup>	1,280	9,218,000	1,420	12,500,000
Seven-county impact area <sup>c</sup>	4,011	32,086,000	4,621	42,512,000
<u>All industries, total<sup>d</sup></u>				
Three-county impact area <sup>b</sup>	2,529	27,606,000	2,934	37,397,000
Seven-county impact area <sup>c</sup>	5,548	54,966,000	6,441	72,795,000

<sup>a</sup>In 1970 dollars.

<sup>b</sup>Big Horn, Powder River, and Rosebud counties.

<sup>c</sup>Big Horn, Powder River, Rosebud, Custer, Musselshell, Treasure, and Yellowstone counties.

<sup>d</sup>Montana residents only.

Source: Water Use and Coal Development in Eastern Montana, Bureau of Business and Economic Research, University of Montana, November 1974.

Table II-7  
Projected Employment and Earnings in the Economic Impact Area  
Alternative 11 -- With Gasification  
1980 and 1985

	Projected 1980		Projected 1985	
	Employment	Earnings <sup>a</sup>	Employment	Earnings <sup>a</sup>
<u>Coal-related Industries</u>				
Mining	1,183	\$17,509,000	1,483	\$ 24,618,000
Export	820	12,136,000	515	15,189,000
Montana residents	685	10,138,000	790	13,114,000
Wyoming residents	135	1,998,000	125	2,075,000
Electrical generation	197	2,916,000	260	4,316,000
Gasification	166	2,457,000	308	5,113,000
Electrical generating plants	175	2,433,000	260	4,082,000
Gasification plants	625	7,938,000	1,250	17,875,000
Railroads (unit train operations only)				
Three-county impact area <sup>b</sup>	192	2,996,000	204	3,590,000
Seven-county impact area <sup>c</sup>	480	7,488,000	510	8,976,000
Coal-related Industries, total				
Three-county impact area <sup>b</sup>	2,175	30,876,000	3,197	50,165,000
Montana residents	2,040	28,878,000	3,072	48,090,000
Seven-county impact area <sup>c</sup>	2,463	35,368,000	3,503	55,551,000
Montana residents	2,328	33,370,000	3,378	53,476,000
<u>Impact on agriculture</u>				
Acres disturbed (cumulative from 1970)		5,480		12,700
Change in farm receipts per year <sup>a</sup>		-\$164,400		-\$381,000
Change in farm earnings per year <sup>a</sup>		-\$ 98,600		-\$228,600
<u>Derivative Industries total<sup>d</sup></u>				
Three-county impact area <sup>b</sup>	1,872	14,414,000	2,636	23,988,000
Seven-county impact area <sup>c</sup>	5,687	46,636,000	7,860	74,676,000
<u>All Industries, total<sup>d</sup></u>				
Three-county impact area <sup>b</sup>	3,912	43,193,000	5,708	71,849,000
Seven-county impact area <sup>c</sup>	8,015	79,907,000	11,238	127,923,000

<sup>a</sup>in 1970 dollars.

<sup>b</sup>Big Horn, Powder River, and Rosebud counties.

<sup>c</sup>Big Horn, Powder River, Rosebud, Custer, Musselshell, Treasure, and Yellowstone counties.

<sup>d</sup>Montana residents only.

Source: Water Use and Coal Development in Eastern Montana, Bureau of Business and Economic Research, University of Montana, November 1974.

Table II-8 indicates total employment in the three-county and seven-county coal development impact areas in Montana as projected by the BBER.

Table II-8  
Total Employment in the Economic Impact Areas  
with and without Coal Development  
1970 and Projected 1980 and 1985

	1970	Projected 1980	Projected 1985
Three-county impact area <sup>a</sup>			
With no coal development	7,500	7,500	7,600
With coal development			
Alternative I -- no gasification	7,500	10,029	10,534
Alternative II -- with gasification	7,500	11,412	13,308
Seven-county impact area <sup>b</sup>			
With no coal development	51,700	51,700	53,100
With coal development			
Alternative I -- no gasification	51,700	57,248	59,541
Alternative II -- with gasification	51,700	59,715	64,338

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, unpublished data (Washington, D.C., 1973); and *idem*, OBERS Projections, unpublished data (Washington, D.C., 1973), derived. The projections under Alternatives I and II were developed by the University of Montana, Bureau of Business and Economic Research (Missoula, Montana).

<sup>a</sup>Big Horn, Powder River, and Rosebud counties.

<sup>b</sup>Big Horn, Powder River, Rosebud, Custer, Musselshell, Treasure, and Yellowstone counties.

Source: Water Use and Coal Development in Eastern Montana, Bureau of Business and Economic Research, University of Montana, November 1974.

C. Projected Manpower Requirements for Construction of Coal-Fueled Energy Installations.

Tables II-9 through II-13 present manpower requirement estimates for the construction of various coal-fueled energy installations. These tables were taken from the Task Force Report: Synthetic Fuels From Coal, a publication of the Federal Energy Administration Project Independence Program. While the commercial feasibility of the types of plants presented in the tables has yet to be thoroughly demonstrated, the federal government is shaping its energy program around such plants. For this reason, the Federal Energy Administration data has been presented. Additional information on manpower requirements may be found in the Coal Development Information Packet published by this council, Pages 47-61.

Table II-9  
Manpower for Low Btu Plant Construction

Energy Resource: Coal  
 Facility Type: Fuel Gas

Unit Capacity: 1.6 x 10<sup>9</sup> scfd

Occupational Groups/ Sic Code	<u>Years to On-Line Production</u>			Total Man Years
	Year 1	Year 2	Year 3	
	<u>Man Years</u>	<u>Man Years</u>	<u>Man Years</u>	
Carpenter/415	-	26	5	31
Cement/ Cons. Fin./421	-	6	1	7
Iron Worker/550	-	16	11	27
Laborer/751	-	24	13	37
Millwright/502	-	1	2	3
Exc. Equip. Op./412	-	14	15	29
Pipefitter/522	-	34	102	136
Electrician/430	-	13	36	49
Asb. Worker	-	9	13	22
Painter/510	-	2	7	9
Sheet Metal Worker/535	-	-	2	2
Mason/410	-	3	-	3
Teamster/715	-	13	2	15
Drafting/152	40	-	-	40
Surveying/161	10	-	-	10
Boilermaker/404	-	11	18	29
Welder/228	-	12	6	18
Engineering/010	5	-	2	7
Engineering/011	8	3	2	13
Engineering/012	5	2	2	9
Engineering/014	5	-	-	5
Engineering/021	-	-	-	-
Engineering/002	10	-	-	10
Total of All Occupations	<u>83</u>	<u>189</u>	<u>239</u>	<u>511</u>



Table II-10  
Manpower for Lurgi Plant Construction

Energy Resource: Coal  
 Facility Type: Lurgi

Unit Capacity: 250 x 10<sup>6</sup> scfd

Occupational Groups/ Sic Code	Year 1 Man Years	<u>Years to On-Line Production</u>			Total Man Years
		Year 2 Man Years	Year 3 Man Years	Year 4 Man Years	
Carpenter/415	-	48	106	12	166
Cement/Cons. Fin./421	-	11	26	-	37
Iron Worker/550	-	32	91	20	143
Laborer/751	-	34	120	43	197
Millwright/502	-	2	8	4	14
Exc. Equip. Op./412	-	30	80	43	153
Pipefitter/522	-	41	413	269	723
Electrician/430	-	11	138	108	257
Asb. Worker	-	5	66	43	114
Painter/510	-	3	19	28	50
Sheet Metal Worker/535	-	1	5	3	9
Mason/410	-	1	2	-	3
Teamster/715	-	24	20	4	48
Drafting/152	50	-	-	-	50
Surveying/161	15	-	-	-	15
Boilermaker/404	-	21	83	51	155
Welder/228	-	25	80	15	120
Engineering/010	28	-	5	4	37
Engineering/011	37	8	17	7	69
Engineering/012	28	-	5	3	36
Engineering/014	28	-	5	5	38
Engineering/021	10	-	4	-	14
Engineering/002	56	-	-	-	56
Total of All Occupations	<u>252</u>	<u>297</u>	<u>1,292</u>	<u>662</u>	<u>2,503</u>

Table II-11  
Manpower for Fischer-Tropsch Plant Construction

Energy Resource: Coal

Facility Type: Fischer-Tropsch

Unit Capacity: 100,000 BBL/Day Liquids -- 1.66 Billion scfd Gas

Occupational Groups/ Sic Code	<u>Years to On-Line Production</u>					Total Man Years
	<u>Year 1</u> Man Years	<u>Year 2</u> Man Years	<u>Year 3</u> Man Years	<u>Year 4</u> Man Years	<u>Year 5</u> Man Years	
Carpenter/415	35	83	48	59	12	237
Cement/Cons. Fin./421	6	14	20	14	6	60
Iron Worker/550	42	62	52	42	10	208
Laborer/751	56	70	79	68	28	301
Millwright/502	2	7	4	6	1	20
Exc. Equip. Op./412	111	55	34	11	11	222
Pipefitter/522	37	148	260	186	111	742
Electrician/430	35	82	78	106	53	354
Asb. Worker	8	33	33	49	25	148
Painter/510	0	4	30	37	4	75
Sheet Metal Worker/535	15	44	74	119	44	296
Mason/410	2	7	5	0	0	14
Teamster/715	14	24	14	7	10	69
Drafting/152	60	16	4	0	0	80
Surveying/161	9	0	0	0	0	9
Boilermaker/404	44	56	47	53	22	222
Welder/228	20	48	44	36	8	156
Engineering/010	13	53	43	165	7	281
Engineering/011	13	93	75	289	12	482
Engineering/012	11	53	43	165	7	279
Engineering/014	5	30	25	94	4	158
Engineering/021	5	0	0	0	0	5
Engineering/002	11	0	0	0	0	11
Total of All Occupations	<u>554</u>	<u>982</u>	<u>1,012</u>	<u>1,506</u>	<u>375</u>	<u>4,429</u>

Table II-12  
Manpower for Pipeline (High-Btu) Gas Plant Construction

Energy Resource: Coal

Facility Type: Pipeline Gas

Unit Capacity: 250 x 10<sup>6</sup> scfd

Occupational Groups/ Sic Code	<u>Years to On-Line Production</u>					Total Man Years
	<u>Year 1</u> Man Years	<u>Year 2</u> Man Years	<u>Year 3</u> Man Years	<u>Year 4</u> Man Years	<u>Year 5</u> Man Years	
Carpenter/415	0	0	48	106	12	166
Cement/Cons. Fin./421	0	0	11	26	0	37
Iron Worker/550	0	0	32	91	20	143
Laborer/751	0	0	34	120	43	197
Millwright/502	0	0	2	8	4	14
Exc. Equip. Op./412	0	0	30	80	43	153
Pipefitter/522	0	0	41	413	269	723
Electrician/430	0	0	11	138	108	257
Asb. Worker	0	0	5	66	43	114
Painter/510	0	0	3	19	28	50
Sheet Metal Worker/535	0	0	1	5	3	9
Mason/410	0	0	1	2	0	3
Teamster/715	0	0	24	20	4	48
Drafting/152	0	50	0	0	0	50
Surveying/161	0	15	0	0	0	15
Boilermaker/404	0	0	21	81	51	153
Welder/228	0	0	25	80	15	120
Engineering/010	0	28	0	4	4	36
Engineering/011	0	37	8	17	7	69
Engineering/012	0	28	0	5	3	36
Engineering/014	0	28	0	5	5	38
Engineering/021	0	10	0	4	0	14
Engineering/002	0	56	0	0	0	56
Total of All Occupations	<u>0</u>	<u>252</u>	<u>297</u>	<u>1,290</u>	<u>662</u>	<u>2,501</u>

Table II-13  
Manpower for Liquid Fuel Plant Construction

Energy Resource: Coal  
Facility Type: Liquid Fuel

Unit Capacity:  $500 \times 10^6$  scf/day gas --  $1 \times 10^5$  bbl. liquid fuel

Occupational Groups/ Sic Code	Years to On-Line Production					Total Man Years
	Year 1 Man Years	Year 2 Man Years	Year 3 Man Years	Year 4 Man Years	Year 5 Man Years	
Carpenter/415	35	81	46	58	12	232
Cement/Cons. Fin./421	6	13	19	14	6	58
Iron Workers/550	41	61	59	41	10	212
Laborer/751	54	69	77	66	27	293
Millwright/502	2	7	4	6	1	20
Exc. Equip. Op./412	108	54	33	11	11	217
Pipefitter/522	36	145	253	181	108	723
Electrician/430	35	80	76	184	52	427
Asb. Worker	8	32	32	48	24	144
Painter/510	0	4	29	36	4	73
Sheet Metal Worker/535	14	44	72	116	43	289
Mason/410	2	7	5	0	0	14
Teamster/715	13	23	13	7	10	66
Drafting/152	58	15	4	0	0	77
Surveying/161	9	0	0	0	0	9
Boilermaker/404	43	54	46	52	22	217
Welder/228	19	46	42	35	8	150
Engineering/010	10	60	30	20	10	130
Engineering/011	20	80	70	20	10	200
Engineering/012	10	50	50	20	10	140
Engineering/014	10	60	50	20	0	140
Engineering/021	0	20	20	10	0	50
Engineering/002	30	120	100	30	0	280
Total of all Occupations	<u>573</u>	<u>1,125</u>	<u>1,130</u>	<u>975</u>	<u>378</u>	<u>4,181</u>

D. Projected Housing Demands in Coal Development Areas.

The following material was drawn from the Draft Northern Great Plains Resource Program Interim Report, published September 1974.

The NGPRP has noted that housing is already in short supply in the coal development areas of the Northern Great Plains, and project that this service will be significantly impacted as development increases. Mobile homes are expected to play a major role in meeting housing demands, particularly during the construction phases of energy installations. As development progresses, the NGPRP expects permanent housing to increase. Tremendous demands upon the local housing industry are predicted.

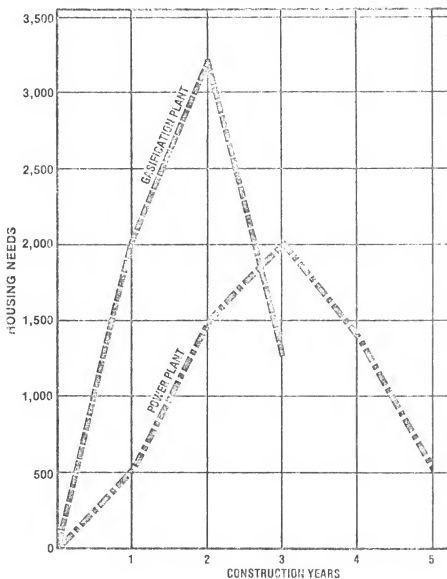
Table II-14 indicates the NGPRP projected housing needs in selected Montana communities under Coal Development Profiles II and III.

Table II-14  
Increased Housing Needs for Selected Communities --  
Operational Phase Development  
CDP's II, III -- 1980, 1985, 2000

<u>Town</u>	<u>CDP</u>	<u>1970</u>	<u>1980</u>	<u>1985</u>	<u>2000</u>
Hardin	II	1,000	-	-	2,000
	III	-	-	2,000	7,000
Forsyth	II	-	-	1,000	-
	III	-	1,000	-	1,000
Colstrip	II	400	1,000	1,000	-
	III	-	2,000	2,000	1,000
Lame Deer	II	500	-	-	-
	III	-	-	2,000	-

Figure II-1 indicates the NGPRP estimate of the housing demand that would be induced by the construction of a single gasification plant and a power plant.

Figure II-1  
Northern Great Plains Resource Program Housing Demand Estimates



Housing requirements necessary to meet the needs of construction workers associated with a single gasification plant and powerplant.

Source: Draft Northern Great Plains Resource Program Interim Report, September 1974.

E. Projected School Age Populations Related to Energy Development.

The tables presented below were taken from the Draft Northern Great Plains Resource Program Interim Report and from Water Use and Coal Development in Eastern Montana.

Table II-15 presents the NGPRP projection of the number of school age children that will accompany energy development in Montana communities under CDP's II and III.

Table II-15  
 Number of School Age Children and Associated Capital  
 Cost Required to Provide Necessary Facilities Resulting  
 From the Operational Phase of Coal Development --  
 Selected Communities  
 CDP's II, III - 1980, 1985, 2000

<u>City</u>	<u>Number of Students 1973-74</u>	<u>CDP</u>	<u>Number of Students 1980</u>	<u>Cost Millions of Dollars</u>	<u>Number of Students 1985</u>	<u>Cost Millions of Dollars</u>	<u>Number of Students 2000</u>	<u>Cost Millions of Dollars</u>
Hardin	1,700	II	130	0.5	130	0.5	1,600	6.4
		III	130	-	1,600	6.4	6,650	25.7
Forsyth	660	II	3,000	11.6	700	2.6	700	2.6
		III	700	2.6	1,000	3.9	1,300	5.1
Colstrip	340	II	1,000	3.9	1,600	6.4	1,600	6.4
		III	1,600	6.4	2,900	11.6	3,900	15.4
Lame Deer	340	II	-	-	-	-	-	-
		III	-	-	1,600	6.4	1,600	6.4



Table II-16, taken from the Bureau of Business and Economic Research report, indicates projected school age population under the BBER development alternatives.

Table II-16

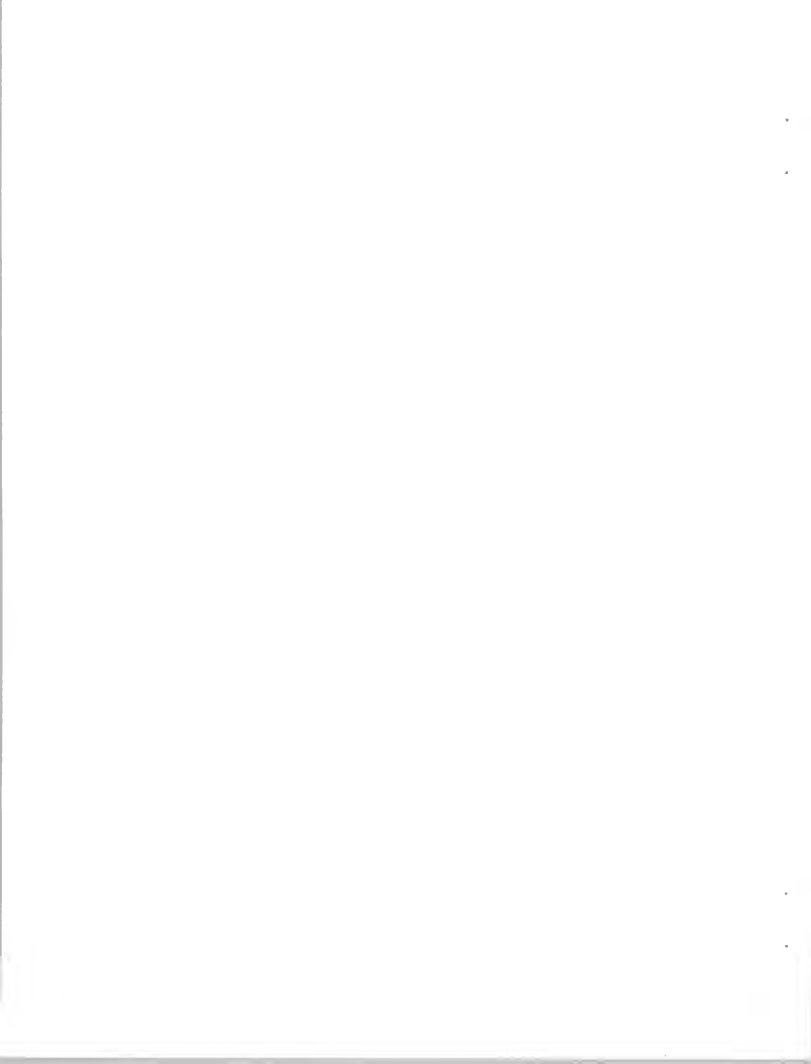
School Age Population and Enrollment in the Economic Impact Areas  
under Alternative Levels of Coal Development  
1970 and Projected 1980 and 1985

	<u>1970</u>	<u>Projected 1980</u>	<u>Projected 1985</u>
<u>Population aged 0-19 years</u>			
Three-county impact area <sup>a</sup>			
Alternative I -- no gasification	8,346	9,051	9,295
Alternative II -- with gasification	8,346	9,797	10,940
Seven-county impact area <sup>b</sup>			
Alternative I -- no gasification	50,205	48,060	49,872
Alternative II -- with gasification	50,205	49,548	53,101
<u>School enrollment</u>			
Three-county impact area <sup>a</sup>			
Alternative I -- no gasification	5,253	5,693	5,847
Alternative II -- with gasification	5,253	6,162	6,881
Seven-county impact area <sup>b</sup>			
Alternative I -- no gasification	34,958	33,450	34,711
Alternative II -- with gasification	34,958	34,485	36,958

Sources: U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Population: 1970, Characteristics of the Population, Montana*, vol. 1, pt. 28 (Washington, D.C.: U.S. Government Printing Office, 1973), tables 35 and 120, pp. 28-66, 28-75, 28-76, 28-201, and 28-204; derived. The projections were developed by the University of Montana, Bureau of Business and Economic Research (Missoula, Montana.)

<sup>a</sup>Big Horn, Powder River, and Rosebud counties.

<sup>b</sup>Big Horn, Powder River, Rosebud, Custer, Musselshell, Treasure and Yellowstone counties.



### III. Service Capabilities in Eastern Montana Counties.

Data concerning the availability and adequacy of community services have long been a problem for both citizens and government agencies. Such data have usually been difficult to obtain, out of date and of varying quality. The state has received federal funds to correct this difficulty in Montana. The Human Services Project, Suite 4, Diamond Block, Helena, Montana 59601 (449-3830), supported by federal funds, is completing a survey of all services provided by the state, local and private sectors. This survey is to be completed by July 1, 1975, and should be available from the Human Services Project Office. An assessment of the adequacy of those services is to commence July 1, 1975, and to be completed June 30, 1976. When completed, this project should prove to be of great significance to citizens and government officials alike.

Energy development in Eastern Montana has imposed significant burdens upon various community resources, as has been stated earlier. The following data, while limited in scope, should present the reader some indication of the ability of some community resources to absorb additional demands induced by population growth. These data have been supplied by the Department of Health and Environmental Sciences and by the Office of the Superintendent of Public Instruction.

#### A. Public Water Supplies in 18 Eastern Montana Counties.

The following data were compiled by the Water Quality Bureau of the Department of Health and Environmental Sciences. The bureau has suggested that all those communities using wells as a primary source of supply have little or no reserve capacity during the warm summer months. Water treatment plants such as those of Miles City or Billings, which are now expanding, will have reserve capacity for additional population growth -- perhaps up to 50 percent. According to the bureau, if housing is to be added in the communities listed, in most cases water mains will have to be constructed to serve the area of expansion. Finally, counts of Total Dissolved Solids (TDS) and sulfate content of water supplies has been listed for those communities where complaints of poor water quality are expected from newcomers to the area.

Table III-1  
Public Water Supplies in 18 Eastern Montana Counties

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Big Horn County</u>				
Hardin	Big Horn River. Treatmant facility 2 million gpd. <u>1/</u>	500,000 gallon storage tank.	1 million gpd. from exist- ing plant expansion, Two Leggins Canal or Yellow- tail Reservoir.	
Lodge Grass	2 wells, combined capabity 500 gpm <u>2/</u>	100,000 gallon elevated tank.		Existing high yield well is available. TDS = 1,240 <u>3/</u> Sulfate = 494 <u>4/</u>
Crow Agency	Little Big Horn River. Treatment facility 0.72 million gpd.	750,000 gallons.		Closing of carpet mill gives additional ca- pacity for expansion.
Busby	3 wells, combined capacity 220 gpm.	115,000 gallons, two elevated tanks.	80 gpm. additional well.	
<u>Carter County</u>				
Ekalaka	4 wells, combined capacity 295 gpm.	95,000 gallons.	50,000 gallons additional storage, 100 gpm. water supply.	

1/ gpd = gallons per day.

2/ gpm = gallons per minute.

3/ TDS = total dissolved solids in milligrams per liter.

4/ sulfates in milligrams per liter.

Table III-I Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Custer County</u>				
Miles City	Yellowstone River, 3 mgd. capacity treatment plant.	200,000 and 225,000 gallon elevated tanks, 1.5 million gallon on-ground reservoir.	Replace existing treat- ment plant with 7 mgd. capacity treatment plant, 2 million gallon on- ground reservoir.	New treatment plant under construction.
<u>Daniels County</u>				
Scobey	3 wells, combined capacity 900 gpm.	100,000 gallons.	250,000 gallons addi- tional storage.	
Flaxville	2 wells, combined capacity 70 gpm. Nitrates above desirable amounts.	25,000 gallons.	65 gpm. additional well.	
<u>Dawson County</u>				
Glendive	Yellowstone River, treatment facility 4.0 mgd. capacity.	1,000,000 gallon concrete reservoir.		
West Glendive	4 wells, combined capacity 335 gpm. at Forest Park.	100,000 gallons at Forest Park.	Additional wells.	
	2 wells, combined capacity 48 gpm. at Highland Park.	100,000 gallons at Highland Park.	200,000 gallon elevated tank.	
Richey	2 wells, combined capacity 80 gpm.	100,000 gallon concrete reservoir.	90 gpm. additional two wells.	

Table III-1 Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Fallon County</u>				
Baker	5 wells, combined capacity 700 gpm.	100,000 and 175,000 gallon concrete tanks.	3 additional wells of 225 gpm. each, 200,000 gallon storage.	
Plevna	2 wells, combined capacity 75 gpm.	35,000 gallon, 1,000 gallon pressure tank.		
<u>Garfield County</u>				
Jordan	1 well, capacity 175 gpm.	200,000 gallon concrete reservoir.	135 gpm. additional well.	TDS = 2,060 Sulfates = 1,060
<u>McCone County</u>				
Circle	4 wells, combined capacity 345 gpm.	90,000 gallon elevated tank.	510 gpm. additional well, 250,000 gallon storage.	New well drilled in 1972 at 200 gpm., used as only source of water supply for the past two years. TDS = 1,020-2,260.
<u>Powder River County</u>				
Broadus	3 wells, combined capacity 590 gpm.	100,000 gallons.	100 gpm. additional well, 100,000 gallon storage.	
Belle Creek	1 well, capacity 40 gpm.	125,000 gallons.		
<u>Prairie County</u>				
Terry	Private wells.		350 gpm. wells (two), 250,000 gallon storage, water distribution system.	

Table III-1 Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Richland County</u>				
Sidney	7 wells, combined capacity 2,675 gpm. 1972 well capacity 1,000 gpm.	300,000 gallon elevated tank.	750,000 elevated storage tank, treatment plant.	
Fairview	1 well, capacity 150 gpm.	100,000 gallon elevated tank.	Additional well.	TDS = 898-1,300 Sulfates = 243-485
Lambert	2 drilled wells.	50,000 gallon elevated tank.	Community system.	TDS = 3,060 Sulfates = 1,690
<u>Roosevelt County</u>				
Wolf Point	5 wells, combined capacity 2,350 gpm.	900,000 gallons combined capacity of three storage tanks.	Improved water quality.	High iron in water. TDS = 890-1,110 Sulfates = 290-390
Poplar	2 wells, combined capacity 900 gpm.	Two 100,000 gallon elevated tanks.	500 gpm. well, 300,000 gallon storage tank.	
Culbertson	Missouri River, two 500 gpm. pumps.	Two 12.5 million gallons earthen basins.	200,000 elevated storage tank.	
Froid	2 wells, combined capacity 225 gpm.	50,000 gallons.		TDS = 1,280 Sulfates = 500
Brockton	2 wells, combined capacity 130 gpm.	50,000 gallons.	50 gpm. well.	
Bainville	2 wells, combined capacity 27 gpm.	108,000 gallons.	150 gpm. well.	TDS = 402-4,110 Sulfates = 93-2,560

Table III-1 Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Rosebud County</u>				
Forsyth	Yellowstone River, 1.5 million gpd. treatment plant.	330,000 gallons.	100,000 gallon storage, modernize treatment plant.	
Lame Deer	2 wells, combined capacity 220 gpm.	200,000 gallons.	2 wells, combined capacity 420 gpm.	
Ashland	Private wells.		250 gpm. from Tongue River infiltration gallery or deep well, 100,000 gallon storage, water distribu- tion system.	
<u>Sheridan County</u>				
Plentywood	6 wells, combined capacity 900 gpm.	178,000 gallons, 1,000,000 gallon reservoir in 1971.	450 gpm. well.	TDS = 470-2,060 Sulfates = 191-1,075
Medicine Lake	1 well, capacity 300 gpm.	55,000 gallons.		TDS = 1,380 Sulfates = 690
Westby	3 wells, combined capacity 150 gpm.	25,000 gallons.	100 gpm. well.	
<u>Treasure County</u>				
Hysham	Yellowstone River infiltration gal- lery, 2 pumps com- bined capacity 210 gpm.	100,000 gallon elevated tank.		



Table III-1 Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
<u>Valley County</u>				
Glasgow	3 wells, combined capacity 2,300 gpm. plus well No. 4 at 700 gpm. Treatment plant for softening and iron removal.	200,000 and 1,500,000 gallon concrete reservoirs.		
Nashua	1 well, 670 gpm.	122,000 gallons.	Iron removal or develop Milk River as source.	TDS = 2,140 Sulfates = 1,230
Opheim	2 wells, combined capacity 132 gpm.	7,000 gallon elevated tank.		
Frazer	2 wells, combined capacity 45 gpm.	75,000 gallon elevated tank.	100 gpm. water source.	TDS - 1,010-1,260 Sulfates = 430-440
<u>Wibaux County</u>				
Wibaux	4 wells combined capacity 250 gpm.	75,000 gallon elevated tank.	Two 85 gpm. wells.	TDS = 1,168-1,265 Sulfates - 360-440
<u>Yellowstone County</u>				
Billings	Yellowstone River, treatment plant 25 mgd.	6,000,000 gallon concrete, 7,700,000 gallons.		Water treatment plant improvements being made to provide capacity of 75 mgd.
		2,000,000 gallon concrete at Billings Heights.		
	4 wells at Lockwood.	175,000 gallons at Lockwood		
Laurel	Yellowstone River, treatment facilities at 3 mgd. capacity.	4,000,000 gallons.		

Table III-1 Cont'd.

<u>Location</u>	<u>Source</u>	<u>Storage</u>	<u>Future Needs</u>	<u>Remarks</u>
Worden-Ballantine	Underground springs 400 gpm. capacity.	60,000 gallons.		
Huntley	Deep well.	15,000 gallons.	Additional storage	TDS = 1,050 Sulfates = 500
Broadview	1 well, 33 gpm. capacity.	13,000 gallons.	Additional storage for fire protection.	TDS = 1,910 Sulfates = 975

B. Sewage Treatment Facilities in 18 Eastern Montana Counties.

The following data have been compiled by the Water Quality Bureau of the Department of Health and Environmental Sciences. The bureau has stated that most Montana sewage treatment plants are presently inadequate to meet conditions imposed by Public Law 92-500 (Federal Water Pollution Control Act Amendments of 1972).

Table III-2  
Sewage Treatment Facilities in 18 Eastern Montana Counties

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Big Horn County</u>		
Hardin	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Lodge Grass	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Crow Agency	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Busby	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
<u>Carter County</u>		
Ekalaka	Mechanical secondary treatment.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements.

Table III-2 Cont'd.

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Custer County</u>		
Miles City	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
<u>Daniels County</u>		
Scobey	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Flaxville	Sewage lagoons.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements.
<u>Dawson County</u>		
Glendive	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
West Glendive	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Richey	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
<u>Fallon County</u>		
Baker	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Plevna	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.

Table III-2 Cont'd.

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Garfield County</u>		
Jordan	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
<u>McCone County</u>		
Circle	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
<u>Powder River County</u>		
Broadus	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Belle Creek	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
<u>Prairie County</u>		
Terry	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
<u>Richland County</u>		
Sidney	Sewage lagoons.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements. New out-fall sewer needed.
Fairview	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Lambert	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.

Table III-2 Cont'd.

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Roosevelt County</u>		
Wolf Point	Sewage lagoon.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Poplar	Sewage lagoon.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Culbertson	Sewage lagoon.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Froid	Sewage lagoon.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Brockton	Sewage lagoon.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Bainville	Sewage lagoon.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
<u>Rosebud County</u>		
Forsyth	Sewage lagoon.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Lame Deer	Sewage lagoon.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Ashland	No system.	Sewer system needed.

Table III-2 Cont'd.

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Sheridan County</u>		
Plentywood	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Medicine Lake	Sewage lagoons.	Existing facility probably meets present sewage treatment requirements but will handle little additional load.
Westby	Sewage lagoons.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements.
<u>Treasure County</u>		
Hysham	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
<u>Valley County</u>		
Glasgow	Aerated lagoon.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements.
Nashua	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Frazer	Sewage lagoons.	Unknown.
<u>Wibaux County</u>		
Wibaux	Sewage lagoons.	Existing facility will probably handle up to 20 percent additional load and still meet present sewage treatment requirements.

Table III-2 Cont'd.

<u>Location</u>	<u>Existing Treatment</u>	<u>Remarks</u>
<u>Yellowstone County</u>		
Billings	Mechanical secondary treatment under construction.	Plant designed for 117,000 population.
Laurel	Mechanical primary treatment.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Worden-Ballantine	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.
Huntley	No system.	
Broadview	Sewage lagoons.	Existing sewage treatment facility needs improvements for existing population to meet present sewage treatment requirements.

C. Relationship Between Urban Population Levels and Consequent Utility Service Needs.

The following table was taken from the Final Report of the Anticipated Impact of Colstrip Generators #3 and #4 on Public Services, Housing and Commercial Services in Colstrip, Forsyth, Surrounding Rosebud County and Other Contiguous Areas Where Impact From Development Activities Can Be Expected, prepared by The Center for Interdisciplinary Studies, Montana State University, Bozeman, Montana, July 1974.

The table indicates the degree of expansion of water and sewage facilities that may be expected, given certain increases in population.



Table III-3  
Relationship Between Urban Population Levels  
And Consequent Utility Service Needs

Utility Needs	Population Size											
	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	5,500	6,000
Water <u>1/</u> (hundreds of acre feet per year)	1	2	3	4	5	6	7	8	9	10	11	12
Water treat- ment <u>2/</u> (millions of gallons per day)	.26	.52	.78	1.04	1.29	1.55	1.81	2.07	2.33	2.59	2.85	3.11
Sewage treat- ment <u>3/</u> (millions of gallons per day)	.08	.17	.25	.34	.42	.50	.59	.67	.76	.84	.92	1.01
Sewage lagoon <u>4/</u> 5 (acres)	10	15	20	25	30	35	40	45	50	55	60	

- 1/ Adequacy Standard: .20 acre feet per person per year. Source: Wyoming State Engineer's Office, cited in Inter-mountain Planners and Werth-Berger Associates, Powder River Basin Capital Facilities Study for the Wyoming Department of Economic Planning and Development, p. 31.
- 2/ Adequacy Standard: 517.5 gallons per day per person. Source: Wyoming State Engineer's Office, cited in Inter-mountain Planners and Werth-Berger Associates, Powder River Basin Capital Facilities Study for the Wyoming Department of Economic Planning and Development, p. 31.
- 3/ Adequacy Standard: 168 gallons per day per person. Source: Wyoming State Engineer's Office, cited in Inter-mountain Planners and Werth-Berger Associates, Powder River Basin Capital Facilities Study for the Wyoming Department of Economic Planning and Development, p. 31.
- 4/ Adequacy Standard: 1 acre per 100 population. Source: Montana State Department of Health and Environmental Sciences.

D. Health Manpower in 18 Eastern Montana Counties.

The health manpower data presented in the following table were compiled by the Division of Comprehensive Health Planning, Department of Health and Environmental Sciences. Additional information concerning health manpower and their recruitment may be obtained from that office. The Office of Comprehensive Health Planning is located at 510 Logan, Helena, Montana, and may be reached by calling 449-3121.

Inspection of Table III-4 will reveal that, of the 18 Eastern Montana counties listed, very few have health manpower in proportion to population in numbers equal to the state average number of persons per health professional. The vast majority of these counties have ratios of persons per health professional that are greatly in excess of state and national averages, particularly with respect to doctors, dentists and registered nurses. In Eastern Montana, great distances compound the shortage of health manpower so that, for some citizens facing emergencies, health professionals simply may be unavailable. Any sudden growth in county populations, particularly if newcomers are engaged in risky operations, can only aggravate the already great shortage of health manpower in most of these counties.

Table III-4  
Health Manpower in 18 Eastern Montana Counties

County	*/ M.D.'s Persons		Dentists Persons		R.N.'s Persons		Optometrists Persons		Osteopaths Persons		Pharmacists Persons		Physical Therapists Persons	
	No.	/M.D.	No.	/M.D.	No.	/R.N.	No.	/Opt.	No.	/Ost.	No.	/Pharm.	No.	/P.T.
	**/		**/		**/									
Bighorn	4	2,514	1	10,057	34	296	1	10,057	0	--	3	3,352	1	10,057
Carter	1	1,956	0	--	9	217	0	--	0	--	1	1,956	0	--
Custer	14	870	5	2,435	49	249	2	6,090	1	12,180	13	937	1	12,180
Daniels	2	1,542	0	--	7-1/2	411	0	--	0	--	1	3,084	0	--
Dawson	6	1,878	5	2,254	28	402	3	3,757	1	11,270	5	2,254	1	11,270
Fallon	1	4,050	0	--	5-1/2	736	0	--	0	--	2	2,025	0	--
Garfield	1/2	3,592	0	--	2-1/2	718	0	--	0	--	1	1,795	0	--
McCone	1	2,875	1	2,875	3-1/2	821	0	--	0	--	0	--	0	--
Powder River	1	2,862	0	--	1	2,862	0	--	0	--	1	2,862	0	--
Prairie	1	1,752	0	--	9-1/2	184	0	--	0	--	1	1,752	0	--
Richland	5	1,967	4	2,459	23	428	3	3,279	0	--	9	1,093	1	9,836
Roosevelt	5	2,073	2	5,183	24	432	2	5,183	0	--	9	1,152	0	--
Rosebud	1	6,032	1	6,032	7-1/2	804	0	--	0	--	2	3,016	0	--
Sheridan	2	2,890	3	1,926	14	413	1	5,780	0	--	2	2,890	0	--
Treasure	0	--	0	--	2	535	0	--	0	--	0	--	0	--
Valley	8	1,434	6	1,912	15-1/2	740	3	3,834	0	--	8	1,434	1	11,472
Wibaux	0	--	0	--	--	--	0	--	0	--	0	--	0	--
Yellowstone	<u>145</u>	<u>603</u>	<u>56</u>	<u>1,560</u>	<u>591</u>	<u>148</u>	<u>8</u>	<u>10,925</u>	<u>2</u>	<u>43,700</u>	<u>62</u>	<u>1,410</u>	<u>7</u>	<u>12,486</u>
Montana		978		2,014		197		7,210		40,055		1,366		4,423
United States		619		1,988		275		10,866		14,127		1,577		13,750

\*/ This number includes both General Practitioners and Specialists.

\*\*/ Includes Public Health Service personnel on Crow Indian Reservation.

Table III-4 Cont'd.

County	Physician Assistants		Sanitarians		LPN's		Veterinarians		Lab Pers.		Dental Hygienist		Chiropractor	
	Persons		Persons		Persons		Persons		Persons		Persons		Persons	
	No.	/P.A.	No.	/P.S.	No.	/LPN	No.	/Vet.	No.	/L.P.	No.	/D.H.	No.	/Chiro.
Big Horn	1	10,057	+	--	7	1,437	3	3,352	3	3,352	0	--	1	10,057
Carter	0	--	+	--	7	279	0	--	2	978	0	--	0	--
Custer	0	--	+	--	28	435	5	2,436	8	1,523	1	12,180	2	6,090
Daniels	0	--	0	--	3	1,028	1	3,084	2	1,542	0	--	0	--
Dawson	0	--	+	--	12	939	3	3,757	4	2,818	0	--	3	3,757
Fallon	0	--	+	--	8	506	1	4,050	1	4,050	0	--	0	--
Garfield	0	--	0	--	2	897	0	--	0	--	0	--	0	--
McCone	0	--	+	--	0	--	1	2,875	1	2,875	0	--	0	--
Powder River	0	--	+	--	0	--	1	2,862	3	954	0	--	0	--
Prairie	0	--	+	--	1	1,752	0	--	3	584	0	--	0	--
Richland	0	--	+	--	24	410	3	3,279	3	3,279	0	--	2	4,918
Roosevelt	0	--	+	--	21	494	3	3,455	9	1,152	0	--	1	10,366
Rosebud	1	6,032	+	--	11	548	4	1,508	2	3,016	0	--	1	6,032
Sheridan	0	--	+	--	8	723	1	5,780	0	--	1	5,780	1	5,780
Treasure	0	--	+	--	0	--	0	--	0	--	0	--	0	--
Valley	0	--	+	--	18	637	4	2,868	7	1,639	0	--	1	11,472
Wibaux	0	--	+	--	0	--	0	--	0	--	0	--	0	--
Yellowstone	0	--	4	--	165	530	14	6,243	44	1,986	9	9,711	13	6,723
Montana						9,013	474	3,918	2,037		18,025		8,793	
United States						15,279	483	7,902	--		12,277		13,262	

+/- Indicates that the Sanitarian is shared with other counties.

++/- Includes Sanitarians working for state government.

E. Inventory of Health Care Facilities in 18 Eastern Montana Counties.

These data were compiled by the Hospital and Medical Facilities Division of the Department of Health and Environmental Sciences. Additional information regarding the adequacy of the available facilities may be obtained from that division which is located at 1424 Ninth Avenue, Helena, Montana, 59601 (449-2037).

Comments on the problems faced by rural residents in gaining access to health care professionals apply equally well here. Health care facilities also are troubled by difficulty in recruiting qualified professionals. In addition, sparse rural populations pose an additional problem for rural facilities -- that of maintaining a sufficient patient census to maintain an efficient service at proper professional levels.

Table III-5  
Inventory of Health Care Facilities In  
18 Eastern Montana Counties

<u>County</u>	<u>Facilities</u>	<u>No. of Facilities</u>	<u>No. of Beds</u>
<u>Hospital and Long Term Care Facilities</u>			
Big Horn	Hospital	1	16
	Long Term Care (Also 36 bed Public Health Service hospital at Crow Agency.)	2	56
Carter	Hospital	1	16
	Long Term Care	1	21
Custer	Hospital	1	124
	Long Term Care	2	183
Daniels	Hospital	1	10
	Long Term Care	1	29
Dawson	Hospital	1	46
	Long Term Care	1	75
Fallon	Hospital	1	29
	Long Term Care	1	22
Garfield	Hospital	1	8
	Long Term Care	1	12

Table III-5 Cont'd.

<u>County</u>	<u>Facilities</u>	<u>No. of Facilities</u>	<u>No. of Beds</u>
McCone	Hospital	1	20
Powder River	No Facilities	-	--
Prairie	Hospital	1	10
	Long Term Care	1	10
Richland	Hospital	1	55
	Long Term Care	1	85
Roosevelt	Hospital	3	89
	Long Term Care	2	80
Rosebud	Hospital	1	26
	Long Term Care	1	39
Sheridan	Hospital	1	26
	Long Term Care	1	33
Treasure	No Facilities	-	--
Valley	Hospital	1	54
	Long Term Care	2	74
Wibaux	Long Term Care	1	40 (under construction)
Yellowstone	Hospital	2	393
	Long Term Care	6	480
	Mental Facilities	1	8 (Billings
	Rehabilitation Facilities	2	- Deaconess)

Licensed First Aid Facilities

Town of Colstrip	Out Patient B
Montana Power Construction Site	Infirmery B

Mental Health & Mental Retardation Institutions

South Central Montana Regional Mental Health Center -- Billings

Table III-5 Cont'd.

Certified Emergency Medical Technicians

<u>County</u>	<u>No. of Technicians</u>
Big Horn	19
Custer	34
Dawson	12
Richland	9
Rosebud	43
Valley	12
Yellowstone	227

Ambulance Services

<u>County</u>	<u>City Located</u>	<u>No. of Services</u>
Big Horn	Hardin	2
Carter	Ekalaka	1
Custer	Miles City	1
Daniels	Scobey	1
Dawson	Glendive/Richey	2
Fallon	Baker	1
Garfield	Jordan	1
McCone	Circle	1
Powder River	Broadus	1
Prairie	Terry	1
Richland	Sidney	1
Roosevelt	Culbertson/Poplar/ Wolf Point	3
Rosebud	Colstrip/Forsyth/Lame Deer	3
Sheridan	Plentywood	1
Treasure	Hysham	1
Valley	Glasgow	1
Wibaux	Wibaux	1
Yellowstone	Billings	2
	Laurel	1
	Worden	1

F. Finances of Educational Systems in 18 Eastern Montana Counties.

The following information was drawn from material provided by the Office of the Superintendent of Public Instruction. A brief outline of the financing of general maintenance and operation costs of school systems is presented, supplemented by a brief description of the elements of school system budgets. In addition, two tables presenting statistical information on relevant county financial resources are presented. Additional information may be acquired by contacting the Office of the Superintendent of Public Instruction, State Capitol, Helena, Montana 59601 (449-3654).

This material has been presented to familiarize the reader with the means by which counties will be able to respond to additional demands on local school systems which may be imposed by energy development.

An Outline of the Financing of the General  
Maintenance and Operation Costs

(I)

A school budget is established annually; the budget fixes the amount of revenue required for the year's operation of the school and the maximum expenditures for the year.

Section 75-6906, R.C.M., 1947, as amended, defined the foundation program as ". . . the minimum operating expenditures as established herein, that are sufficient to provide for the educational program of a school."

Under the law, the Foundation Program is based on enrollment, and varies in proportion to the enrollment classification of the school.

Enrollment, under the Foundation Program law, is translated by a specified formula into "average number belonging -- ANB" which results in a relationship between the number of pupils enrolled in a school and the number of school days, for Foundation Program calculations.

5/

The actual budget for operating a school must equal at least the Foundation Program -- the minimum amount for operating a school, as defined by law; in most instances, the actual school budget exceeds the minimum established as the Foundation Program. A maximum budget is fixed by law for general maintenance and operation; the maximum may be exceeded only by voted authorization. The total school budget may include budgets for specific purposes, in addition to the general maintenance and operation (General Fund) budget. This outline describes only the financing of the General Fund budget.

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5/ Exclusive of transportation, debt service and other supplement budgets.



(II)

A mandatory basic county tax of 25 mills is levied on property in the county for elementary schools and 15 mills for high schools.

Monies from these levies are apportioned to school districts according to a statutory formula for county equalization aid. (75-6915 R.C.M.)

(III)

If Foundation Program requirements exceed the total income from the school's proportionate share of the basic county levy, the school may then receive state equalization aid according to a schedule established by the Foundation Program law.

State equalization aid is derived from 25 percent of revenue from state income taxes, 25 percent from corporation license taxes, 50 percent of the state's share of U.S. oil and gas royalties, the interest from the investment of the public school fund and the income from the rentals of public school land, any other sources provided by law, and appropriations made by the legislature.

When the available state equalization aid is insufficient to permit the state to provide its share of the total Foundation Program as established by statutory schedule, the amount of the state's deficiency must be raised by levying an additional tax on all property in the state to bring the district's school revenue up to the full amount of the Foundation Program.

The Foundation Program does require a basic minimum expenditure for school operation, with the provision that additional taxes be levied to support this expenditure when state revenues are insufficient to pay the state's scheduled share.

(IV)

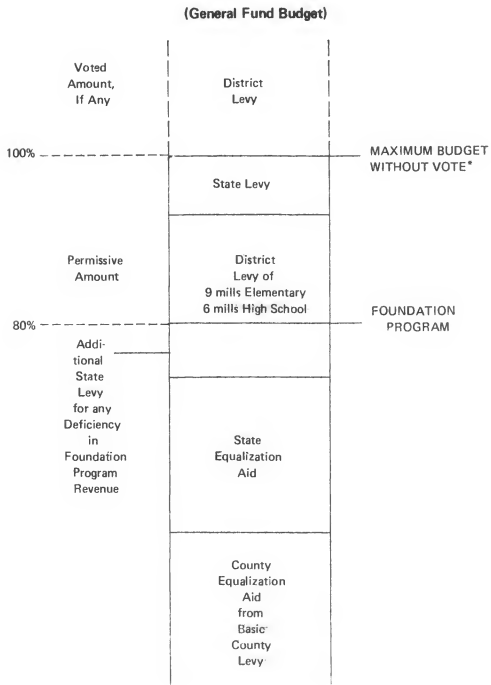
The above sources of revenue are utilized for General Fund budgets which do not exceed the minimum Foundation Program. For a General Fund budget which exceeds the Foundation Program by an amount of not more than 25 percent, the latter amount of revenue may be raised by levying an additional tax of not more than nine mills in elementary school districts and not more than six mills in high school districts on the property of the district; the balance of the permissive amount will be raised by a statewide levy and distributed to the various school districts. These levies, the permissive levies, may be imposed without vote of the electors.

The maximum budget is the sum of the Foundation Program and the maximum permissive amount (one-fourth of the Foundation Program); this maximum budget is fixed by law.

Revenue required for a General Fund budget in excess of that derived from the above sources may be raised by an additional levy on the property in the district, if the electors of the district vote to approve this additional levy and such amount does not exceed the maximum budget increase allowed by the legislature.

Such a voted levy may be used to meet those financial requirements of the General Fund budget which are not met by other means.

Figure III-1  
School District General Maintenance and Operation



### General Fund

The General Fund is established for the purpose of general maintenance and operation of the school. The General Fund budget for elementary and high schools is authorized by Chapter 69 of Title 75, R.C.M. Community College budgeting is authorized by 75-8127.

District levies, tuition earnings, county levies, miscellaneous county revenues, state funds, and in certain instances federal funds, are authorized as the sources of financial support for the General Fund. Any district revenues not designated for other purposes are used for the General Fund.

The General Fund must be kept separate from all other funds. The levies and other revenues authorized for the General Fund may be used solely for General Fund purposes, and must not be mingled with other revenues, either in day-to-day recordkeeping, or in year-end cash balances.

### The Foundation Program

The General Fund budget for districts operating accredited schools includes the Foundation Program. No school's General Fund budget may be less than the Foundation Program; it may be more, under the circumstances detailed below. State equalization aid is paid:

Only for the budgets of accredited schools;

Only when the General Fund budget is at least equal to the minimum amount prescribed by the Foundation Program law;

Only when the Basic County Levy has been set in accordance with law;

Only when a closed school has been officially approved for reopening;

Only when a new school has been officially approved for opening;

Only when complete financial and statistical data pertaining to the district and county have been reported to the Superintendent of Public Instruction;

Only when any requirements pertaining to a special situation have been met.

A district may use state equalization aid only for basic maintenance and operation. Money from state equalization aid must not be used for debt retirement, adult education, recreation programs, school food services, new buildings or new grounds. (75-6917 R.C.M.)

A district may not use state equalization aid for any budget except the General Fund budget.

#### Additional Revenue by Voted Authorization

To provide revenue for the General Fund budget, beyond the maximum budget authorized by 75-6905, the taxpayers of the district may, by vote, authorize an additional district levy.

The Board of Trustees is authorized to call an election for the purpose of voting a special levy, before August 1 of the year for which the budget is prepared. The election may be held in conjunction with the regular annual school board election, or may be held separately. The procedure for the preparation for and conduct of the election is outlined in 75-6923 and Chapter 64, Title 75.

#### Federal Funds in the General Fund Budget

Federal funds intended for the General Fund budget such as those received under Title 1 of Public Law 81-874 (Federal Impact, P.L. 874), are budgeted for according to the same general principles which apply to other General Fund revenues.

A district receiving federal funds for its General Fund support, when the federal funds were not included in the budget, may expend any funds up to, but not exceeding, the total approved expenditure. The total of the approved budget may not be exceeded; funds remaining will become cash reapportioned for the next year.

#### Additional Expenditure of Federal Funds by Voted Authorization

Any General Fund expenditures above the maximum budget must be authorized by a vote of the people, in accordance with 75-6923.

According to Vol. 28, Op. 58 (Official Opinions of the Attorney General), voted authorization to exceed the maximum budget (formerly called the permissive budget) must be obtained by a district receiving federal funds, even though the federal funds are adequate to finance the desired expenditure above the maximum budget.

In accordance with Vol. 28, Op. 58, the Attorney General has recommended a special form of ballot for use by school district electors to authorize the expenditure of federal funds; this ballot is worded to avoid giving electors the erroneous impression that such a vote requires a tax levy.

Other funds used by school district in Montana are:

- Transportation Fund
- Bus Depreciation Reserve Fund
- School Food Services Fund
- Tuition Fund
- Retirement Fund
- Debt Service Fund
- Building Fund
- Building Reserve Fund

Comprehensive Insurance Fund  
Adult Education Fund  
Housing and Dormitory Fund  
Non-Operating Fund  
Traffic Education Fund  
Interlocal Cooperative Agreement Fund  
Post-Secondary Vocational Technical Center Fund  
Miscellaneous Federal Fund.

Table III-6 presents the amounts allocated to the school General Fund, and the amounts raised by the Permissive Levy and Voted Levy in 18 Eastern Montana Counties in 1974. The Foundation Program component of the General Fund has been omitted from this table because it is determined as a constant proportion based upon school enrollment. Also included are columns indicating the Voted Levy amount as a percent of the General Fund, and the General Fund allocation per ANB for those counties. These data are presented for both high school and elementary school districts within the counties.

The percent of the General Fund attributable to the Voted Levy is an indication of the extra amount local taxpayers voted to tax themselves to support their school system. This amount may vary year to year, but remains fairly constant except in unusual circumstances. As stated earlier, the upper limit of the Permissive Levy is established by law. General Fund needs must exceed Foundation Program and Permissive Levy resources before the Voted Levy may be used. Growth induced impacts upon the school system may be expected to increase the revenues required from the Voted Levy.

Inspection of Table III-6 will reveal that some of the 18 counties listed vote for high voted levies, as a proportion of the school General Fund, than does the "average county" in the state. In only one county is the Voted Levy less for high school districts than the comparable state figure. Regarding elementary school districts, the Voted Levies are closer to the state average. Similar comments are appropriate for General Fund allocations per ANB.

Table III-6 indicates Average Number Belonging (ANB), Taxable Valuation and a ratio of taxable evaluation per ANB for school districts in 18 Eastern Montana counties. The ratio of taxable valuation per ANB provides an indication of the financial ability of the counties listed to absorb increases in school budgets.

Expansion of existing school facilities, or the construction of new ones, is exclusively a school district responsibility and is funded by district taxpayers. Districts are limited by law to a bonded indebtedness equal to 5 percent of the assessed valuation of the district. On July 1, 1975, the degree of bonded indebtedness allowed will be increased to 8 percent.

school districts may exceed this limit in impacted areas, under certain limitations, and bond in excess of the limits of existing assessed valuation, if it can be demonstrated that the assessed valuation of the district will increase to meet its increased indebtedness in the near future.

Data relevant to the adequacy of existing school facilities and to possible needs for expansion or construction of facilities in the counties listed are not available at this time.

Table III-6  
General Fund Allocations for School Districts of 18 Eastern Montana Counties, 1974

County	High School Districts				Elementary School Districts				
	General Fund	Permissive Levy	Voted Levy	Voted Levy as Percent Gen. Fund	Gen. Fund Allocation/ANB	General Fund	Permissive Levy	Voted Levy	Gen. Fund Allocation/ANB
Big Horn	851,855	128,541	209,148	24.6	1,217	1,710,934	269,744	362,214	926
Carter	186,504	22,522	73,892	39.6	1,727	320,766	49,943	66,873	1,015
Custer	961,287	150,162	210,478	21.9	1,109	1,672,520	256,654	389,248	957
Daniels	503,659	62,053	193,396	38.4	1,702	534,006	78,073	143,641	1,037
Dawson	1,577,020	233,941	407,317	25.8	1,569	1,535,991	262,130	225,342	856
Fallon	647,607	77,589	259,665	40.1	1,538	648,994	98,508	156,457	904
Garfield	238,388	34,060	68,087	28.6	1,691	299,521	53,141	0	1,002
McCone	278,985	35,797	100,000	35.8	1,304	397,154	59,081	101,748	887
Powder River	327,293	42,731	113,639	34.7	1,244	362,531	55,999	79,987	942
Prairie	199,109	29,191	53,153	26.7	1,285	211,915	37,458	24,627	831
Richland	1,047,182	158,357	255,396	35.9	1,131	1,524,979	231,193	369,015	934
Roosevelt	1,317,725	188,426	375,593	28.5	1,341	1,893,673	279,152	497,912	979
Rosebud	772,155	116,465	189,829	24.6	1,165	1,482,075	223,440	364,874	935
Sheridan	767,966	111,065	212,639	27.7	1,391	920,661	132,342	258,952	994
Treasure	123,592	24,718	0	0	1,200	130,527	25,691	2,073	717
Valley	1,481,070	199,807	482,034	32.5	1,419	2,251,917	329,698	603,428	957
Wibaux	174,983	26,513	42,418	24.2	1,316	200,448	33,101	34,942	846
Yellowstone	8,328,259	1,217,382	2,241,350	26.9	1,117	14,393,921	2,094,407	3,921,885	988
Montana	<u>67,773,920</u>	<u>10,334,374</u>	<u>16,099,928</u>	<u>23.8</u>	<u>1,166</u>	<u>109,344,004</u>	<u>16,779,566</u>	<u>25,214,059</u>	<u>920</u>

Table III-7  
ANB, Taxable Valuation and Taxable Valuation Per ANB  
For School Districts of 18 Eastern Montana Counties

<u>High School Districts</u>				<u>Elementary School Districts</u>			
<u>County</u>	<u>ANB</u>	<u>Taxable Value</u>	<u>\$/ANB</u>	<u>ANB</u>	<u>Taxable Value</u>	<u>\$/ANB</u>	
Big Horn	700	29,412,811	42,018	1,847	29,412,811	15,925	
Carter	108	7,810,150	72,316	316	7,810,150	24,716	
Custer	867	17,463,235	20,142	1,747	17,463,235	9,996	
Daniels	296	6,350,813	21,455	515	6,350,813	12,332	
Dawson	1,005	18,852,072	18,758	1,795	18,852,072	10,503	
Fallon	421	25,638,389	60,899	718	25,638,389	35,708	
Garfield	141	7,270,308	51,562	299	7,270,308	24,315	
McCone	214	8,167,485	38,166	448	8,167,485	18,231	
Powder River	263	34,917,305	132,765	385	34,917,305	90,694	
Prairie	155	5,674,032	36,607	255	5,674,032	22,251	
Richland	926	22,554,050	24,356	1,633	22,554,050	13,811	
Roosevelt	983	17,346,307	17,646	1,935	17,346,307	8,964	
Rosebud	663	25,666,297	38,712	1,585	25,666,297	16,193	
Sheridan	552	13,742,065	24,895	926	13,742,065	14,840	
Treasure	103	3,480,129	33,788	182	3,480,129	19,122	
Valley	1,044	19,721,670	18,890	2,352	19,721,670	8,385	
Wibaux	133	9,959,617	74,884	237	9,959,617	42,024	
Yellowstone	<u>7,455</u>	<u>125,124,366</u>	<u>16,784</u>	<u>14,564</u>	<u>125,124,366</u>	<u>8,591</u>	
Montana	<u>58,148</u>	<u>1,191,172,179</u>	<u>20,485</u>	<u>118,880</u>	<u>1,191,172,179</u>	<u>10,020</u>	



#### IV. Taxes on Coal Production in Montana.

The following are citations from three statutes enacted during the 44th Legislative Session. These statutes considerably change the complexion of taxation of coal production. Senate Bill 13 reestablishes the bases and rates at which coal production will be taxed in Montana. Senate Bills 86 and 87 indicate the methods by which these tax revenues will be apportioned within the state. With its enactment, Senate Bill 13 superceded the Strip Mines License Tax and the Net Proceeds Tax, as it applies to coal production. The Resource Indemnity Trust Tax, which imposes a 0.5 percent tax upon gross proceeds, remains in effect.

- A. Senate Bill 13: "An act revising the taxation of coal production; providing for a severance tax on coal produced at a percentage of value; deleting coal from the provisions taxing the net proceeds of mines; providing for taxation of the gross proceeds from coal as an element in the property tax system; providing for certain royalties; amending Sections 84-301, 84-302, 84-1309.1 and 84-5402; and repealing Sections 84-1301 through 84-1309, 84-1310 and 84-1311, RCM 1947."

"Section 84-1313. Definitions. As used in this chapter: (1)'Contract sales price' means either (a) the price of coal extracted and prepared for shipment f.o.b. mine, excluding that amount charged by the seller to pay taxes paid on production, or (b) a price imputed by the department under section 84-1318. . . . (8) 'Taxes paid on production' include any tax paid to the federal, state or local governments upon the quantity of coal produced as a function of either the volume or the value of production, and do not include any tax upon the value of mining equipment, machinery or buildings and lands, any tax upon a person's net income derived in whole or in part from the sale of coal, or any license fee."

"Section 84-1314. Severance Tax -- rates imposed -- exemptions. A severance tax is imposed on each ton of coal produced in the state in accordance with the following schedule:"

<u>Heating Quality</u> <u>(Btu Per Pound of Coal)</u>	<u>Surface</u> <u>Mining</u>	<u>Underground</u> <u>Mining</u>
Under 7,000	12¢ or 20% of value	5¢ or 3% of value
7,000 - 8,000	22¢ or 30% of value	8¢ or 4% of value
8,000 - 9,000	34¢ or 30% of value	10¢ or 4% of value
Over 9,000	40¢ or 30% of value	12¢ or 4% of value

"The formula which yields the greater amount of tax in a particular case shall be used at each point in this schedule. 'Value' means the contract sales price. A person is not liable for any severance tax upon the first five thousand (5,000) tons of coal he produces in a quarter-year."

"Section 84-1319. Disposal of license or severance taxes. License or severance taxes collected under the provisions of this chapter or such sections as may enact a severance tax on coal in 1975 are allocated as follows:

(1) To the county for such purposes as the governing body of that county may determine from which coal was mined for each calendar year prior to January 1, 1980, three cents (3¢) per ton or four percent (4%) of the severance tax paid on the coal mined in that county, whichever is higher and for each calendar year following December 31, 1979, this amount shall be three cents (3¢) per ton or three and one-half percent (3-1/2%) of the severance tax on the coal mined in that county, whichever is higher.

(2) To the earmarked revenue fund, such portions of the severance tax as may be authorized by laws enacted in 1975.

(3) All other revenues from license or severance taxes collected under the provisions of this chapter shall be deposited to the credit of the general fund of the state."

"Section 84-301. Classification of property for taxation. For the purpose of taxation the taxable property in the state shall be classified as follows:

Class One. The annual net proceeds of all mines and mining claims, except coal mines, after deducting only the expenses specified and allowed . . .

Class Three. . . . the annual gross proceeds of underground coal mines . . .

Class Nine. The annual gross proceeds of coal mines using the strip mining method."

"Section 84-302. Basis for imposition of taxes. As a basis for the imposition of taxes upon the different classes of property specified in the preceding section, a percentage of the true and full value of the property of each class shall be taken as follows:

Class One. One hundred percent (100%) of its true and full value.

Class Three. Thirty-three and one-third percent (33-1/3%) of its true and full value.

Class Nine. Forty-five percent (45%) of its true and full value."

Projected coal tax revenues under the old Strip Mines License Tax and under the provisions of Senate Bill 13 are contrasted in Table IV-1. These calculations were performed by Alan Taylor of the Montana Department of Revenue, using production estimates taken from MEAC's Coal Development Information Packet, with adjustments for calculation on a fiscal year basis. Current contract sales prices used in calculation of the tax revenues were provided by the coal companies and were adjusted for calculation on a fiscal year basis. These prices, current as of January, 1975, were:

Decker	\$4.55/ton
Knife River	4.45/ton
Peabody	2.51/ton
Western Energy	3.30/ton
Westmoreland	4.26/ton

Table IV-1  
Tax Revenues Under the Strip Mines License  
Tax and Senate Bill 13, FY 1976 and FY 1977

<u>Statute</u>	<u>FY 1976</u>	<u>FY 1977</u>
Strip Mines License Tax	8,168,850	10,328,450
Senate Bill 13	<u>27,462,857</u>	<u>39,142,168</u>
	<u>19,294,007</u>	<u>28,813,718</u>

- B. Senate Bill 86: "An act creating a fund for research, development and demonstration of alternative energy sources and allocating certain revenue from coal taxes to the fund; directing the Department of Natural Resources and Conservation to make grants from the fund in support of alternative energy research; providing for an alternative energy advisory committee; making appropriations; amending Section 84-1309.1, RCM 1947."

"Section 84-7407. Purpose. The purposes of this act are to stimulate research, development, and demonstration of energy sources which are harmonious with ecological stability by virtue of being renewable, thereby to lessen that reliance on nonrenewable energy sources which conflicts with the goal of long-range ecological stability, and to provide for the funding and administration of such research, provided that demonstration or development projects funded under this act may not be used to commercially market electricity, heat energy or energy by-products."

"Section 84-7408. Definitions. As used in this act: (1) 'alternative renewable energy source' means a form of energy or matter, such as solar energy, wind energy, or methane from solid waste, capable of being converted into forms of energy useful to mankind, and the technology necessary to make this conversion, when the source is not exhaustible in terms of this planet and when the source or the technology are not in general commercial use."

"Section 84-1309.1. Disposal of license taxes. License taxes collected under the provisions of this chapter or severance taxes collected under such statutes as may be enacted in 1975 are allocated as follows:

- (1) To the county general fund from which coal was mined three cents (3¢) per ton.
- (2) Two and one-half percent (2-1/2%) of total collections per year until December 31, 1979, and thereafter four percent (4%) of total collections per year to the earmarked revenue fund, to the credit of the alternative energy research development and demonstration account.
- (3) All other revenues from license taxes collected under the provisions of this chapter shall be deposited to the credit of the general fund of the state."

- C. Senate Bill 87: An act creating funds for assisting local governments and highway systems impacted by coal development and for the support of public schools throughout the state; creating a fund to support county planning; allocating certain revenue from coal taxes to the funds; establishing a board to make grants to local governments; authorizing the department of community affairs to support county planning; directing the department of highways to reconstruct certain roads; establishing a legislative review committee; making appropriations; amending Sections 75-6916 and 84-1309.1, RCM 1947.

"Section 50-1701. Purpose. The purposes of this act are to assist local government units which have been required to expand the provision of public services as a consequence of large-scale development of coal mines and coal-using energy complexes, to assist in the construction and reconstruction of designated portions of highways which serve the area affected by such large-scale development, to support county land planning, and to invest a portion of the tax revenue from coal mines in a permanent fund, the income from which shall be used for the support of public schools throughout the state."

"Section 50-1702. Local impact and education trust fund account and coal area highway improvement account established. (1) There is within the earmarked revenue fund a local impact and education trust fund account. Moneys are payable into this account under Section 84-1309.1. The state treasurer shall draw warrants from this account upon order of the coal board. (2) There is within the earmarked revenue fund a coal area highway improvement account."

"Section 84-1309.1. Disposal of license or severance taxes. License or severance taxes collected under the provisions of this chapter or such sections as may enact a severance tax on coal in 1975 are allocated as follows:

(1) To the county for such purposes as the governing body of that county may determine from which coal was mined for each calendar year prior to January 1, 1980, three cents (3¢) per ton or four percent (4%) of the severance tax paid on the coal mined in that county, whichever is higher, and for each calendar year following December 31, 1979, three cents (3¢) per ton or three and one-half percent (3-1/2%) of the severance tax paid on the coal mined in that county, whichever is higher.

(2) Twenty-seven and one-half percent (27-1/2 %) of total collections per year, until July 1, 1979, and thereafter thirty-five percent (35%), to the earmarked revenue fund to the credit of the local impact and education trust fund account.

(3) For each of the four (4) fiscal years following the effective date of this act ten percent (10%) of total collections per year to the earmarked revenue fund to the credit of the coal area highway improvement account.

(4) Ten percent (10%) of total collections per year, to the earmarked revenue fund, for state equalization aid to public schools of the state.

(5) For the period ending December 31, 1979, one percent (1%) of total collections per year to the earmarked revenue fund, to the credit of the county land planning account.

(6) Two and one-half percent (2-1/2%) of total collections per year to the earmarked revenue fund to the credit of the alternative energy research development and demonstration account.

(7) Two and one-half percent (2-1/2%) of total collections per year, to the sinking fund, to the credit of the renewable resource development bond account.

(8) Two and one-half percent (2-1/2%) of total collections per year through June 30, 1979, of which portion one-half (1/2) shall be allocated to the earmarked revenue fund, for the purpose of acquisition of sites and areas described in Section 62-304, subject to legislative appropriations, and one-half (1/2) shall be allocated to the trust and legacy fund, for the purpose of parks acquisition. After June 30, 1979, five percent (5%) of total collections per year shall be allocated to the trust and legacy fund, for the purpose of parks acquisition. Income from the fund established in this subsection may be appropriated for the acquisition of sites and areas described in Section 62-304.

(9) All other revenues from license taxes collected under the provisions of this chapter shall be deposited to the credit of the general fund of the state."

"Section 50-1703. Coal area highway reconstruction program. (1) There is appropriated to the department of highways for each of the four (4) fiscal years following the effective date of this act all the funds in the coal area highway improvement account for carrying out the programs authorized by this section.

(2) The department of highways, within the area designated as the eastern Montana coal field economic growth center as certified to the secretary of transportation by the governor under section 143, Title 23, United States Code, shall prepare a special construction program for the reconstruction of deficient sections of these highways.

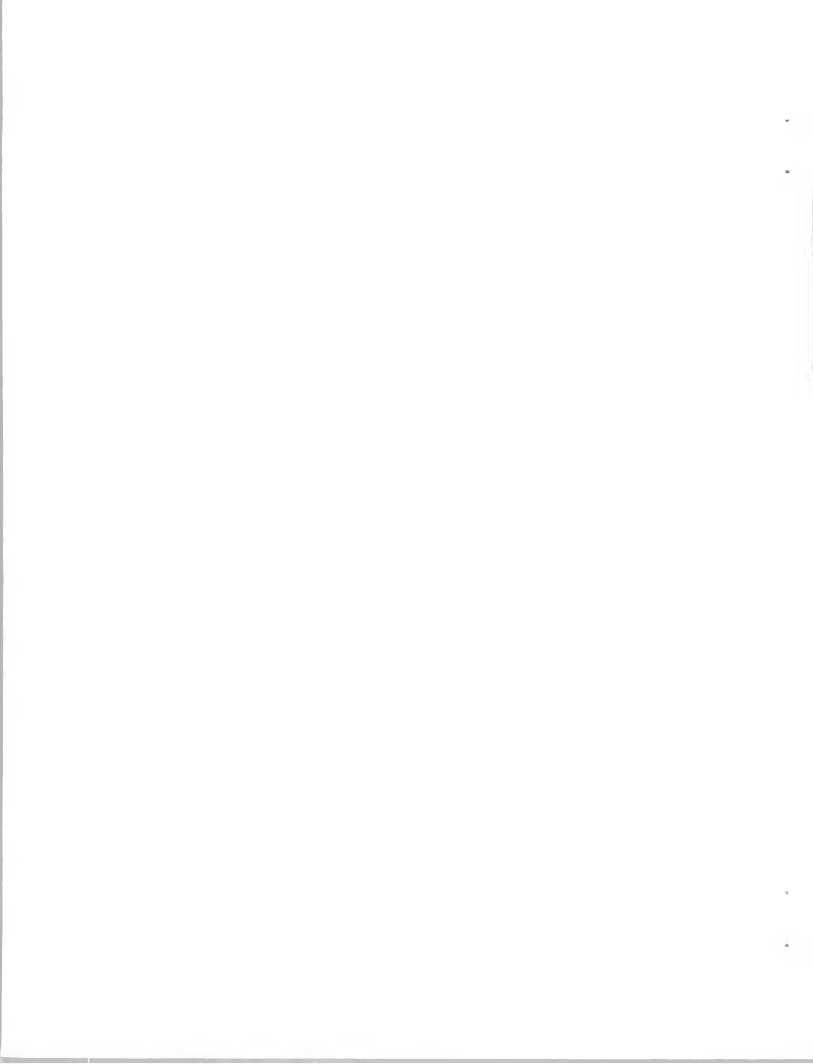
(3) The department of highways shall expedite the planning and reconstruction program for projects on the designated portions and any federal funds that may be made available to match such funds; until federal funds are made available to match the funds allocated under this subsection the department of highways may, upon approval of the Montana state highway commission, expend such funds for planning and reconstruction projects.

(4) Funds allocated under this subsection shall not be used to match apportionments made for primary and secondary highways under the Federal Aid Highway Acts; however, nothing in this subsection should be construed to prohibit the implementation of projects otherwise funded by apportionments made under the Federal Aid Highway Acts; furthermore, planning and reconstruction projects may be financed in whole or in part by public and private funds provided such projects conform to the applicable standards, regulations and procedures of the department of highways and the federal highway administration."

"Section 50-1707. Priorities for impact grants. (1) The department of community affairs shall designate counties, towns, school districts and other governmental units which have had or expect to have an increase in estimated population of at least ten percent (10%) during any three (3) years since 1972 as a result of the impact of coal development. The coal board shall, subject to the appropriations of the legislature, award at least fifty percent (50%) of all grants awarded to governmental units and state agencies for meeting the needs caused by coal development each year to these designated governmental units.

(2) Attention should be given by the coal board to the need for community planning before the full impact is realized. Applicants should be able to show how their request reasonably fits into an over all plan for the orderly management of the existing or contemplated growth problems.

(3) All funds placed in the local impact and educational trust fund account established under this act, subject to the limitations imposed by section 50-1710, shall be subject to appropriations by the legislature for use related to local impact or for transfer to a permanent trust for education."





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ADDENDUM TO TABLE 3, PAGE 9,  
COAL DEVELOPMENT INFORMATION PACKET

Table 3-A: Federal Surface Ownership <sup>\*/</sup> in 17 Eastern Montana Counties, In Acres and As a Percent of Total County Surface <sup>\*\*/</sup>

<u>County</u>	<u>Total Surface</u>	<u>Federal Surface</u>	<u>Federal Percent Total Surface</u>
Big Horn	3,235,200	27,207.75	0.84
Carter	2,120,320	512,292.82	24.2
Custer	2,416,000	272,722.32	11.3
Daniels	923,520	200.0	--
Dawson	1,523,200	67,090.9	4.4
Fallon	1,045,120	48,079.93	4.6
Garfield	3,079,680	514,846.38	16.7
McCone	1,697,280	212,018.81	12.5
Powder River	2,110,720	257,796.18	12.2
Prairie	1,112,960	61,143.08	5.5
Richland	1,345,920	52,819.15	3.9
Roosevelt	1,535,360	4,635.17	0.3
Rosebud	3,226,880	233,529.53	7.2
Sheridan	1,100,800	300.44	--
Treasure	638,080	11,883.65	1.9
Valley	3,266,560	649,912.01	19.9
Wibaux	570,240	25,882.49	4.5
AREA TOTALS	<u>30,947,840</u>	<u>2,952,360.1</u>	<u>9.5</u>

<sup>\*/</sup> State Office, Bureau of Land Management, United States Department of the Interior, Billings.

<sup>\*\*/</sup> Montana Department of State Lands.

ADDENDA TO TABLE 6, PAGES 11-20  
COAL DEVELOPMENT INFORMATION PACKET

Table 6A: Summary Table of Data on Private Coal  
 And Surface Lease, Etc., In Acres \*/

<u>County</u>	<u>Grand **/ Total</u>	<u>Coal Leases</u>	<u>Surface Agreements</u>	<u>Mining***/ Leases</u>
Carter	251,848	N.A.	6,729	92,464
Custer	146,092	27,544	3,468	N.A.
Dawson	154,341	102,645	42,412	7,204
Garfield	30,711	N.A.	N.A.	N.A.
Fallon	180,010	15,877	7,525	N.A.
McCone	107,585	60,482	38,950	8,153
Powder River	148,348	87,168	24,720	N.A.
Prairie	8,020	640	N.A.	N.A.
Richland	37,032	21,492	12,980	N.A.
Rosebud	124,321	43,654	12,887	28,760
Treasure	31,520	4,480	7,420	N.A.
Wibaux	85,817	16,391	37,169	32,257
12 County Totals	<u>1,305,645</u>	<u>380,373</u>	<u>194,260</u>	<u>168,838</u>

\*/ Data provided by Action for Eastern Montana, Inc.

\*\*/ Grand totals may not equal the sum of column data.

\*\*\*/ The term "mining leases" refers to leasing of various mineral resources.  
 The minerals leased for mining may vary by county.

Table 6B: Summary Table of Private Coal and Surface  
Leases As A Percent Total County Surface

<u>County</u>	<u>Grand Total</u>	<u>Coal Leases</u>	<u>Surface Agreements</u>	<u>Mining Leases</u>
Carter	11.9	---	0.3	4.4
Custer	6.0	1.1	0.1	---
Dawson	10.1	6.7	2.8	0.5
Garfield	1.0	---	---	---
Fallon	17.2	1.5	0.7	---
McCone	6.3	3.6	2.3	0.5
Powder River	7.0	4.1	1.2	---
Prairie	0.7	---	---	---
Richland	2.8	1.6	1.0	---
Rosebud	3.9	1.4	0.4	0.9
Treasure	4.9	0.7	1.2	---
Wibaux	<u>15.0</u>	<u>2.9</u>	<u>6.5</u>	<u>5.7</u>
12 County Totals	6.3	<u>*/</u>	<u>*/</u>	<u>*/</u>

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\*/ Percentage figures were not calculated for these items because relevant data are either missing or unclear.

